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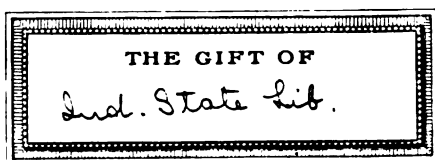
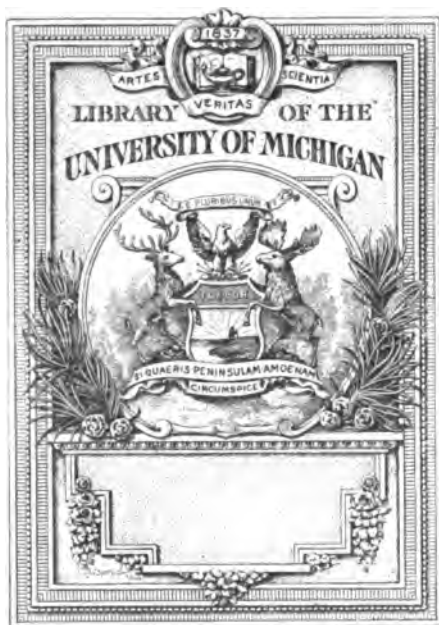
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TWENTY-SEVENTH

ANNUAL REPORT

OF THE

State Board of Health
of Indiana

FOR THE

Fiscal Year Ending September 30, 1908.
Statistical Year Ending December 31, 1908.

TO THE GOVERNOR.

INDIANAPOLIS :
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING
1909

THE STATE OF INDIANA,
EXECUTIVE DEPARTMENT,
INDIANAPOLIS, December 8, 1908.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

OFFICE OF AUDITOR OF STATE,
INDIANAPOLIS, October 7, 1909.

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

JOHN C. BILLHEIMER,
Auditor of State.
OCTOBER 8, 1909.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

MARK THISTLETHWAITE,
Secretary to the Governor.

Filed in the office of the Secretary of State of the State of Indiana.
October 8, 1909.

FRED A. SIMS,
Secretary of State.

Received the within report and delivered to the printer October 8, 1909.

A. E. BUTLER,
Clerk Printing Board.

TWENTY-SEVENTH ANNUAL REPORT
OF THE
INDIANA STATE BOARD OF HEALTH.

HON. J. FRANK HANLY, *Governor of Indiana*:

Dear Sir—The Indiana State Board of Health has the honor, in accordance with the law, to present herewith its twenty-seventh annual report.

CONTENTS OF REPORT.

This report presents in full the "doings and investigations" of the Board for the year ending September 30, 1908; presents an account of all expenditures, and also presents a full statement of the work done in the State Laboratory of Hygiene, which is divided into two divisions, namely, *The Bacteriological and Pathological*, and *The Chemical*.

"DOINGS AND INVESTIGATIONS."

Four regular and three special meetings were held during the year, and the minutes fully set forth what was done. The quarterly reports of the Secretary, presented at the regular quarterly meetings, give specific accounts of his office and field work.

VITAL STATISTICS.

The foundation of public health work is vital statistics. Fortunately, our State now has correct mortality statistics, and this year (1908) marks the beginning of the collection of fairly accurate birth statistics. Unfortunately, accurate morbidity statistics are not yet secured. Therefore, a complete and solid foundation for hygienic work is not yet laid in Indiana.

To enable the Board to collect accurate birth records, an amendment to the law is required. The said law now allows physicians,

midwives and householders twenty days in which to report births. This provision introduces a wheel into the machine which prevents it from doing efficient work. There are no reasons why births should not be reported immediately, and every reason why they should be. We therefore recommend that the twenty-day defect be eliminated.

Morbidity records are of the utmost importance to a civilized state, and the Indiana statistics recognize the fact, for they provide for the collecting of said records. The law commanding the work is sufficient, but we are denied means for its enforcement. We find by the time deaths and births are collected and duly tabulated, and a certain amount of prevention work done, that our funds are exhausted, and, of course, this stops further progress.

It is a greater mistake for a state to be without an accounting of the lives of its people than to be without an accounting of their monies. The State Board of Health should not only be commanded to keep an account of the human vitality and given ample funds for the purpose, but it should be put under a penalty if it failed.

SANITARY WORK.

A review of the quarterly reports of the Secretary to the Board, as they appear in the minutes herein given, will show what sanitary work has been done.

The State Board of Health has been active and made strong efforts to awaken interest in sanitary matters, and has tried hard to see to it that the health laws were enforced. As a result, there has been an increasing demand upon the Board for aid and information. Requests are almost daily received asking that the Board pay visits and give advice in sanitary matters, or solve some sanitary problem which has arisen. As far as possible, the Secretary or some member of the Board has answered these calls in person. To answer all such calls in person would take all of the Secretary's time and also considerable time of each member of the Board. This is evident when it is known there were 410 calls from the people in 1908 for personal visits. When it is impossible, on account of distance and time involved, to meet these calls for personal visits, letters of explanation and advice are written. If the demands of the people for personal aid from the State Board of Health are to be met, the authority to employ and the means to support one or two deputy state health officers must be given. Very few physicians have studied the branch of medicine known

as hygiene, and therefore it very frequently happens that the appointed local health officers know nothing or very little of the work they are called to do, and find themselves at sea when a sanitary problem appears. There would be little or no demand for State Board advice if the law required that local health officers should be informed in hygiene and if the tenure of office and pay were such as to attract competent men. We recommend this change in the law as being eminently practical and businesslike.

EPIDEMICS.

The State has been fortunate in not having had any widespread epidemics. However, smallpox has been quite prevalent, but not fatal. During the nine months ending September 30 there have been reported 1,484 cases, with 5 deaths. Every county has been invaded. Local epidemics of diphtheria and scarlet fever have occurred, but none was destructive. The usual outbreaks in localities of measles, whooping-cough and chickenpox have occurred, but as said no widespread conditions have existed. It is now recognized that the best time to suppress epidemics is before they occur, and to this end there must be general education of the people how to live so as to avoid infection. We hope for the support of the legislature in this work. There is a decrease of diphtheria deaths in 1908 as compared with 1907. The figures are: Diphtheria deaths the first nine months of 1907, 241; in the corresponding period of 1908, 147; decrease, 94. This disease accords with former years as follows: Diphtheria deaths, 1900, 746; 1901, 554; 1902, 424; 1903, 462; 1904, 314; 1905, 366; 1906, 402; 1907, 336;

We attribute this decrease to the active work of health officers, coupled with the now almost universal and early use of antitoxin. The free antitoxin law passed in 1907 has been the means of saving many lives. In many instances poor children must have died had not the law provided the life-saving remedy.

STATE LABORATORY OF HYGIENE.

The two divisions of the State Laboratory of Hygiene have done much good work, as will appear from a review of the reports as given in this volume. The hundreds of diphtheria examinations made in the Bacteriological Division of the Laboratory, have been the means of stopping many epidemics and the saving of many lives. The examinations of sputum for tuberculosis, of specimens

of blood for malaria and typhoid fever; and the examinations of the many specimens of pathological tissues, as set forth in the report, have certainly been of great benefit.

The work of the chemical laboratory, as appears in the report, shows the excellent work of the division and speaks for itself.

RECOMMENDATIONS.

In accordance with the law, which makes it the duty of the State Board of Health to make such recommendations concerning health laws as it may deem proper, we recommend as follows:

SANITARY SCHOOLHOUSES, MEDICAL EXAMINATION OF SCHOOL CHILDREN AND TEACHING HYGIENE IN THE PUBLIC SCHOOLS.

We suggest a statute requiring that all schoolhouses hereafter built shall conform to natural sanitary laws; also that the act should contain a clause requiring that hygiene be taught in the public schools, and that the medical inspection of school children be made compulsory. Not less than 10 per cent of school monies is now wasted on account of unsanitary schoolhouses, in which start most of our epidemics and in which are laid the foundations in many instances for consumption and other diseases in after life. Massachusetts, Michigan and other states have statutes of the character we propose, and better health and progress among the school children has thus been secured, as well as better health in adult life. There is a great opportunity to strengthen the Nation by building sanitary schoolhouses and in instructing the children in hygiene.

The medical examination of school children has become a necessity, and should not longer be delayed. In every primary school-room may be found defective and sick children. Many of the defectives may have their defects removed or ameliorated, and the sick ones should be immediately cared for. The British Board of Education says, in its report:

"Medical inspection is founded on a recognition of the close connection which exists between the physical and mental condition of the children and the whole process of education. It seeks to secure ultimately for every child, normal or defective, conditions of life compatible with that full and effective development of its organic functions, its special senses, and its mental powers, which constitute a true education."

Medical inspection is a movement national in scope in England, France, Belgium, Sweden, Switzerland, Bulgaria, Japan, the Ar-

gentine Republic and Germany. In the United States, seventy cities outside of Massachusetts, and all cities and towns of that State, have systems of medical inspection.

Massachusetts has a compulsory medical inspection law. New Jersey has a permissive one, Vermont a law requiring the annual testing of the vision and hearing of all school children, and Connecticut one providing for such tests triennially.

We heartily recommend such a law in Indiana. It is certain to come in time, and it will be an honor to the State when it does come. When we remember that fully 50 per cent. of all young school children are more or less defective or more or less ill, we at once must recognize it is not Christian to neglect or to refuse to give them relief.

POLLUTION OF STREAMS, WATER SUPPLIES AND SEWERS.

Indiana is an inland State, and is fortunately supplied with numerous streams and lakes, and except in the central and southern portions there is yet abundance of ground water. It is apparent that our streams and lakes are valuable assets, and should be jealously protected from pollution or other destruction. They are sources of beauty and refreshment to the land, sources of valuable food supply, and must eventually furnish public water supplies. It is this last fact which makes it urgent that early action be taken for their preservation.

The experience of the Indianapolis and of the Muncie water companies demonstrates that the ground water is limited, is growing less and less, and is inadequate for the public supply. For a few years both of the cities named had an abundant pure supply, but gradually the quantity diminished and new wells were bored. This did not relieve the situation, for the new wells penetrated the same water-bearing stratum as the old ones, and no increase in quantity was secured.

The Muncie Water Company relieved the situation for a time by making up the deficiency with filtered water from White River, but lately the oil wells above Muncie so badly polluted the river with kerosene products that it was impossible to filter the water. This drove the Muncie company to dam a small creek and establish a water shed. It is certain, however, if stream pollution is permitted to continue, that this supply for Muncie can not be depended upon.

The Indianapolis Water Company has been compelled to put

in extensive filter beds, costing five or six hundred thousand dollars, to filter the water from White River. This filtered water is at present mixed with deep well water (the amount of the latter diminishing daily), and this constitutes the Indianapolis supply. The lesson is: Indianapolis must very soon depend entirely upon the river, and if the gross pollution which now exists is permitted to continue, filtration will become more and more difficult and expensive, and Indianapolis, and also other cities on the shores of White River, will be sorely injured, possibly to a degree to stop their growth. What has occurred along White River will in time occur in all parts of the State, and now seems to be the time to apply the remedy. We propose a law similar to that of Massachusetts, where these same problems arose some years ago, and which the said law has satisfactorily solved. This law should make it unlawful to deposit sewage, factory wastes, or any polluted matter into streams or lakes, and it should provide that within a certain time all cities and towns shall dispose of their sewage by well-proven methods known to sanitary science; and that all factories shall, within twelve months from the going into effect of the law, dispose of their wastes in a sanitary way. All of this has been repeatedly accomplished in other States.

As cities and towns are continually making expensive mistakes in the matter of establishing public water supplies and in building sewers and drains, it seems wise to adopt the successful method pursued in Ohio, Massachusetts, Pennsylvania and other States, to prevent such mistakes, with their consequent money loss and sanitary failure. This method is to require by statute that all plans and specifications for public water supplies, and for sewers and drains, shall be submitted for the approval of the State Board of Health before the same may be constructed.

For the State Board of Health to properly execute a law controlling stream pollution, the water supplies and sewer construction, a sanitary engineering department would be required; and therefore, said law would necessarily create such department. There should be a competent sanitary engineer appointed by the State Board, and a proper appropriation given for the enforcement of the act.

We believe a wise law of this character is absolutely necessary for the promotion of the welfare of the State, and would be an economic measure. and for these reasons we propose the same. We further believe that the protection of the lakes and streams

from pollution-destruction is a subject which will not down, and the question about the matter is: Shall the State attend to it now, or do so after disease, death and pecuniary loss compel action?

THE HEALTH LAW.

The Health Law of Indiana was passed in 1891. It does not recognize the advances made in sanitary science since its enactment. For this reason it should be amended. A provision which greatly cripples the law is in regard to health officers. It does not provide that health officers shall be men who are informed in hygiene. Very few doctors have studied hygiene, and, therefore, the usual officer knows little or nothing of the science. In addition to this defect, officers are appointed for only one year, and local authorities may pay such salaries as they deem proper. Not until only such persons are eligible to the place of health officer who have knowledge of the work, and not until the term of office is reasonably extended and the pay made commensurate with the services performed, will the people be properly served.

As the condition now exists, it is only rarely that good men seek the position. In many instances, persons unfitted for the work offer to fill the position for a small sum, and when accepted they put the money in their pockets and do nothing. This is bad business. Viewing the old health law of 1891 as a machine, it may be said that several old wheels and levers should be removed and new ones of new design substituted.

We recommend these improvements as wise and of the utmost importance to the profit and happiness of the State.

We most respectfully request that you give these recommendations as to the improvement of health laws your careful consideration, and we hope they will secure support and be recommended in your next message to the General Assembly.

Approved by State Board of Health and ordered transmitted to the Governor.

FEDERICK A. TUCKER, President.

J. N. HURTY, Secretary.

FINANCIAL STATEMENT.

INDIANA STATE BOARD OF HEALTH,

For Fiscal Year October 1, 1907, to September 30, 1908.

1907.		
Oct. 11.	To Indianapolis Teleph. Co., rent and tolls.	\$30 20
" 11.	To Sanborn-Marsh Co., phone holder bracket	5 00
" 11.	To J. L. Anderson, expense.....	3 85
" 11.	To H. W. Bennett, P. M., postage stamps...	150 00
" 11.	To Dr. Fred A. Tucker, board meeting.....	11 96
" 11.	To Dr. Geo. T. McCoy, board meeting.....	13 15
" 11.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 11.	To Dr. T. Henry Davis, board meeting.....	13 76
" 25.	To Dr. Fred A. Tucker, special board meeting	11 96
" 25.	To Dr. Geo. T. McCoy, special board meeting	12 75
" 25.	To Dr. W. N. Wishard, special board meeting	10 00
" 25.	To Dr. T. Henry Davis, special board meeting	13 76
" 31.	To H. W. Bennett, postage stamps.....	155 00
" 31.	To May Stuart, salary	50 00
" 31.	To Maude E. Linn, salary.....	50 00
" 31.	To Florence Froschauer, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
Nov. 13.	To Henry W. Bennett, P. M., postage stamps	150 00
" 30.	To May Stuart, salary	50 00
" 30.	To Maude Linn, salary.....	50 00
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	24 00
" 30.	To Harry Wyatt, salary	30 00
Dec. 4.	To Henry W. Bennett, P. M., postage stamps	200 00
" 21.	To Harry Wyatt, labor	36 00
" 21.	To Henry W. Bennett, P. M., postage stamps	200 00
" 31.	To May Stuart, salary	50 00
" 31.	To Maude E. Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 16.	To Wm. M. Bird, agent, by 1 Wales adding machine	325 00
Total, first quarter.....		\$2,206 39

1908.

Jan.	10.	To Dr. Fred A. Tucker, board meeting.....	\$10 96
"	10.	To Dr. Geo. T. McCoy, board meeting.....	12 50
"	10.	To Dr. Wm. N. Wishard, board meeting....	10 00
"	10.	To Dr. T. Henry Davis, board meeting.....	13 51
"	10.	To Adams Express Co., services October, November and December, 1907.....	18 09
"	10.	To American Express Co., services October, November and December, 1907.....	17 57
"	10.	To United States Express Co., services October, November and December, 1907.....	10 31
"	10.	To American Toilet Supply Co., laundry 3 months	3 75
"	10.	To American Medical Association Journal, 1 year	5 00
"	10.	To J. L. Anderson, expense.....	5 75
"	10.	To Aquos Distilled Water Co., water.....	5 00
"	10.	To W. H. Bass Photo Co., merchandise.....	25 72
"	10.	To Wm. B. Burford, printing and stationery	1,134 33
"	10.	To The Bobbs-Merrill Co., merchandise....	9 95
"	10.	To The Bresette-Dugan Co., merchandise....	4 50
"	10.	To Central Union Telephone Co., tolls and services	42 51
"	10.	To Indianapolis Telephone Co., tolls and services	36 90
"	10.	To Evans & Fulton, merchandise.....	25
"	10.	To The H. Lieber Co., merchandise.....	11 14
"	10.	To The Medical Publishing Co., text-books..	9 00
"	10.	To Pettis Dry Goods Co., merchandise.....	33 28
"	10.	To E. G. Routzahn, labor.....	10 00
"	10.	To Western Union Telegraph Co., services..	4 05
"	10.	To The Scofield-Pierson Co., merchandise....	8 92
"	10.	To Smith-Premier Typewriter Co., repairs..	1 50
"	10.	To G. E. Stechert & Co., text-books.....	3 49
"	10.	To Dr. J. N. Hurty, expense.....	97 39
"	18.	To Henry W. Bennett, P. M., postage stamps	200 00
"	31.	To May Stuart, salary.....	50 00
"	31.	To Maude Linn, salary.....	50 00
"	31.	To Mrs. Eva Case, salary.....	50 00
"	31.	To Mrs. Florence Vollrath, salary.....	50 00
"	31.	To Ethel Hoffman, salary.....	50 00
"	31.	To Louise Lingenfelter, salary.....	50 00
Feb.	24.	To Henry W. Bennett, P. M., postage stamps	200 00
"	29.	To May Stuart, salary.....	50 00
"	29.	To Maude Linn, salary.....	50 00
"	29.	To Mrs. Eva Case, salary.....	50 00
"	29.	To Mrs. Florence Vollrath, salary.....	50 00
"	29.	To Ethel Hoffman, salary.....	50 00
"	29.	To Louise Lingenfelter, salary.....	50 00

Mar. 1.	To Dr. Fred A. Tucker, board meeting.....	\$10 96
" 10.	To Dr. Geo. T. McCoy, board meeting.....	11 75
" 10.	To Dr. T. Henry Davis, board meeting.....	12 76
" 10.	To Dr. Wm. N. Wishard, board meeting.....	10 00
" 16.	To Central Union Telephone Co., tolls for January and February.....	6 10
" 16.	To Art Metal Construction Co., file case....	100 00
" 24.	To Henry W. Bennett, P. M., postage stamps	200 00
" 31.	To May Stuart, salary.....	34 62
" 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
" 31.	To Nina Bogue, salary.....	15 38
Total, second quarter.....		\$3,196 94
Apr. 10.	To Dr. Fred A. Tucker, board meeting.....	\$14 81
" 10.	To Dr. Geo. T. McCoy, board meetings.....	11 75
" 10.	To Dr. Wm. N. Wishard, board meeting....	10 00
" 10.	To Dr. T. Henry Davis, board meeting.....	13 26
" 10.	To Addressograph Co., merchandise.....	4 31
" 10.	To American Tiolet Supply Co., laundry....	3 75
" 10.	To Aquos Distilled Water Co., merchandise	50 00
" 10.	To Adams Express Co., services.....	12 55
" 10.	To American Express Co., services.....	16 70
" 10.	To United States Express Co., services.....	2 90
" 10.	To W. H. Bass Photo Co., merchandise.....	18 60
" 10.	To Wm. B. Burford, printing and stationery	372 90
" 10.	To The Scarborough Co., maps.....	2 00
" 10.	To Smith-Premier Typewriter Co., merchan- dise	1 50
" 10.	To Central Union Telephone Co., rent and tolls	21 45
" 10.	To Indianapolis Telephone Co., rent and tolls	31 15
" 10.	To Western Union Telegraph Co., tolls.....	6 58
" 10.	To J. L. Anderson, expense	30 47
" 10.	To J. N. Hurty, expense	127 50
" 27.	To Henry W. Bennett, P. M., stamps.....	200 00
" 30.	To Maude E. Linn, salary.....	50 00
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Nina Bogue, salary.....	50 00
May 14.	To Dr. Fred A. Tucker, Health Officers' con- ference	12 21
" 14.	To Dr. Geo. T. McCoy, Health Officers' con- ference	11 75

May 14.	To Dr. T. Henry Davis, Health Officers' conference	\$12 76
" 14.	To Dr. C. S. Woods, lecture before conference	10 00
" 14.	To Prof. Severance Burrage, lecture before conference	10 00
" 14.	To Claypool Hotel Co., 10 lunches.....	7 50
" 29.	To Robert H. Bryson, P. M., postage stamps	200 00
" 30.	To Maude E. Linn, salary.....	50 00
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Nina Bogue, salary.....	50 00
June 30.	To Maude Linn, salary.....	50 00
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
" 30.	To Nina Bogue, salary.....	50 00
Total for third quarter.....		\$2,071 40
July 9.	To American Toilet Supply Co., laundry....	\$3 75
" 9.	To Dr. H. W. Alexander & Co., merchandise.	75
" 9.	To J. L. Anderson, expense.....	11 31
" 9.	To Aquos Distilled Water Co., merchandise..	6 50
" 9.	To W. H. Bass Photo Co., merchandise.....	2 40
" 9.	To Dr. A. W. Brayton, services.....	50 00
" 9.	To Chas. F. Bretzman, photographs.....	6 00
" 9.	To Bird Typewriter Co., merchandise.....	1 75
" 9.	To Wm. B. Burford, printing and stationery	637 48
" 9.	To Adams Express Co., services.....	5 30
" 9.	To United States Express Co., services.....	5 67
" 9.	To Dr. J. N. Hurty, expense.....	145 01
" 9.	To Indianapolis Calcium Light Co., lantern.	7 50
" 9.	To Dr. Geo. M. Sternberg, treasurer (National T. B. Asso.), dues.....	5 00
" 9.	To Wm.' Schoenhelt, M. D., merchandise....	12 03
" 9.	To Smith-Premier Typewriter Co., merchandise	75
" 9.	To N. L. Stebbins, photographs.....	6 00
" 9.	To Addressograph Co., merchandise.....	4 31
" 9.	To Western Union Telegraph Co., services..	2 38
" 9.	To Dr. Fred A. Tucker, expense.....	57 70
" 9.	To Dr. Geo. T. McCoy, expense.....	23 50
" 9.	To Dr. T. Henry Davis, expense.....	26 44
" 9.	To Dr. Wm. N. Wishard, expense.....	10 00
" 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00

July 31.	To Ethel Hoffman, salary	\$50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
Aug. 31.	To Maude Linn, salary.....	50 00
" 31.	To Mrs. Eva Case, salary.....	50 00
" 31.	To Mrs. Florence Vollrath, salary.....	50 00
" 31.	To Ethel Hoffman, salary.....	50 00
" 31.	To Louise Lingenfelter, salary.....	50 00
Sept. 8.	To Dr. Fred A. Tucker, board meeting.....	23 05
" 8.	To Dr. Geo. T. McCoy, board meeting.....	23 50
" 8.	To Dr. T. Henry Davis, board meeting.....	25 52
" 16.	To Aquos Distilled Water Co., merchandise.	4 50
" 16.	To W. H. Bass Photo Co., photographs.....	1 00
" 16.	To Chas. F. Bretzman, photographs.....	50
" 16.	To Wm. B. Burford, printing and stationery	368 84
" 16.	To Claypool Hotel, meals.....	4 50
" 16.	To L. E. Morrison, repairs.....	2 25
" 16.	To Smith-Premier Typewriter Co., ribbons..	3 00
" 16.	To J. L. Anderson, expense.....	6 91
" 16.	To Dr. J. N. Hurty, expense.....	50 18
" 16.	To Bobbs-Merrill Co., merchandise.....	3 32
" 24.	To Dr. Fred A. Tucker, expense.....	15 22
" 24.	To Dr. J. N. Hurty, expense.....	17 36
" 24.	To J. L. Anderson, expense.....	2 75
" 24.	To American Toilet Supply Co., laundry...	3 75
" 24.	To Bobbs-Merrill Co., merchandise.....	1 56
" 24.	To Aquos Distilled Water Co., merchandise..	3 00
" 24.	To American Express Co., services.....	11 68
" 24.	To Adams Express Co., services.....	5 76
" 24.	To United States Express Co., services.....	1 42
" 24.	To Indianapolis Telephone Co., tolls.....	6 30
" 29.	To Robert H. Bryson, P. M., postage stamps	100 00
" 30.	To Maude Linn, salary.....	50 00
" 30.	To Mrs. Eva Case, salary.....	50 00
" 30.	To Mrs. Florence Vollrath, salary.....	50 00
" 30.	To Ethel Hoffman, salary.....	50 00
" 30.	To Louise Lingenfelter, salary.....	50 00
Total for the fourth quarter.....		\$2,467 40
Appropriation		\$10,000 00
Expense first quarter		\$2,206 39
Expense second quarter		3,196 94
Expense third quarter		2,071 40
Expense fourth quarter		2,467 40
Total expense		\$9,942 13
Amount reverting to general fund.....		\$57 87
Secretary's salary (specific)		\$3,000 00
Chief Clerk's salary (specific)		1,500 00

RECAPITULATION.

Appropriations.

Secretary's salary (specific)	\$3,000 00
Chief Clerk's salary (specific)	1,500 00
Appropriation State Board of Health Office	10,000 00
Appropriation Laboratory of Hygiene	14,000 00
Appropriation Laboratory of Pure Food and Drugs	15,000 00
Total	\$43,500 00

Expenditures.

Secretary's salary (specific)	\$3,000 00
Chief Clerk's salary (specific)	1,500 00
Office expenses	9,942 13
Laboratory of Hygiene, expenses	13,590 17
Laboratory of Pure Food and Drugs, expenses	14,837 38
Total	\$42,869 68
Total amount reverting to general fund	\$630 32

FINANCIAL STATEMENT.

INDIANA STATE BOARD OF HEALTH—LABORATORY OF HYGIENE.

For Fiscal Year October 1, 1907, to September 30, 1908.

1907.

Oct. 7.	To J. B. Rucker, Jr., salary	\$35 00
" 11.	To Wm. B. Burford, printing and supplies ..	295 72
" 31.	To Dr. Helene Knabe, salary	116 66
" 31.	To Dr. Ada Schweitzer, salary	60 00
" 31.	To Dr. R. S. Rissler, salary	20 00
" 31.	To Mrs. F. M. Carper, salary	50 00
" 31.	To R. P. Johnson, salary	45 00
Nov. 2.	To Dr. J. N. Hurty, expense	64 05
" 2.	To Dr. Wm. H. Wishard, expense	47 75
" 2.	To Wm. H. Armstrong, merchandise	5 25
" 2.	To Joseph Gardner, merchandise	23 32
" 13.	To Henry W. Bennett, postage stamps	50 00
" 30.	To Dr. Helene Knabe, salary	116 67
" 30.	To Dr. Ada Schweitzer, salary	75 00
" 30.	To Dr. R. S. Rissler, salary	52 00
" 30.	To Mrs. F. M. Carper, salary	50 00
" 30.	To R. P. Johnson, salary	45 00
" 30.	To Frank Krapp, salary	23 00
" 30.	To J. Herbert Brewster, salary	80 00

Dec. 4.	To Wm. Schoenheit, merchandise.....	\$12 05
" 12.	To Aquos Distilled Water Co., merchandise..	1 50
" 12.	To Wm. B. Burford, printing and stationery	75 80
" 12.	To Wm. W. Langenskamp & Son, repairs....	4 00
" 12.	To Indianapolis Gas Co., vulcan heater.....	3 75
" 12.	To Parke, Davis & Co., merchandise.....	32 70
" 12.	To Pittman-Myers & Co., merchandise.....	6 16
" 31.	To Dr. Helene Knabe, salary.....	116 66
" 31.	To Dr. Ada Schweitzer, salary.....	75 00
" 31.	To Dr. R. S. Rissler, salary.....	52 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To J. H. Brewster, salary.....	80 00
" 31.	To R. P. Johnson, salary.....	45 00
Total for first quarter.....		\$1,809 04
1908.		
Jan. 4.	To Bryden Bros., carpenter work.....	\$38 46
" 10.	To Adams Express Co., services October, November and December, 1907.....	2 75
" 10.	To American Express Co., services October, November and December, 1907.....	85
" 10.	To United States Express Co., services October, November and December, 1907.....	1 38
" 10.	To American Toilet Supply Co., laundry, 3 months	17 10
" 10.	To Aquos Distilled Water Co., water.....	2 00
" 10.	To Wm. B. Burford, printing and stationery	82 95
" 10.	To Evans & Fulton, revolving stool.....	3 25
" 10.	To Dr. Helene Knabe, expenses.....	1 20
" 10.	To Parke, Davis & Co., merchandise.....	10 00
" 10.	To Pettis Dry Goods Co., merchandise.....	5 46
" 10.	To E. H. Sargent & Co., merchandise.....	1 85
" 10.	To Vonnegut Hardware Co., merchandise...	2 58
" 10.	To J. L. Anderson, expense.....	4 46
" 10.	To Scofield-Pierson Co., text-books.....	3 50
" 10.	To Bausch & Lomb Optical Co., merchandise	93 20
" 13.	To H. M. Alexander & Co., medicine and apparatus	23 63
" 31.	To Dr. Helene Knabe, salary.....	116 67
" 31.	To Dr. Ada Schweitzer, salary.....	75 00
" 31.	To Dr. R. S. Rissler, salary.....	67 73
" 31.	To Mrs. F. M. Carper, salary.....	50 00
" 31.	To R. P. Johnson, salary.....	45 00
" 31.	To J. N. Brewster, salary.....	80 00
Feb. 11.	To Henry W. Bennett, P. M., postage stamps	100 00
" 15.	To Aquos Distilled Water Co., merchandise.	2 00
" 15.	To City Express Parcels Delivery, freight and drayage	2 34
" 15.	To Evans & Fulton, file guides.....	13 50
" 15.	To Scofield-Pierson Co., text-book	2 00
" 15.	To Dr. Helene Knabe, expense.....	8 11

Feb. 15.	To Bausch & Lomb Optical Co., balance on bill November 23, apparatus.....	\$24 69
" 15.	To G. E. Stechert & Co. (October 18 to February 3), books	80 39
" 15.	To Wm. Schoenhelt, medicine (tuberculin)..	12 03
" 15.	To Union Paper Co., mailing tubes.....	120 83
" 15.	To W. B. Saunders & Co., text-books.....	25 00
" 17.	To Bannum-Keene Lumber Co., cabinet doors, cases and lumber.....	133 20
" 29.	To Dr. Helene Knabe, salary	116 67
" 29.	To Dr. Ada Schweitzer, salary.....	75 00
" 29.	To Dr. R. S. Rissler, salary.....	75 00
" 29.	To Mrs. F. M. Carper, salary.....	50 00
" 29.	To R. P. Johnson, salary.....	45 00
" 29.	To J. H. Brewster, salary.....	80 00
Mar. 19.	To W. C. Brydon, cabinet work and material	27 20
" 31.	To Dr. Helene Knabe, salary.....	116 66
" 31.	To Dr. Ada Schweitzer, salary	75 00
" 31.	To Dr. R. S. Rissler, salary.....	75 00
" 31.	To R. P. Johnson, salary.....	45 00
" 31.	To J. H. Brewster, salary.....	100 00
" 31.	To Mrs. F. M. Carper, salary.....	50 00
Total for second quarter.....		\$2,183 64
Apr. 10.	To Aquos Distilled Water Co., merchandise.	\$8 00
" 10.	To American Toilet Supply Co., laundry...	35 05
" 10.	To American Express Co., services.....	12 70
" 10.	To Adams Express Co., services.....	7 20
" 10.	To United States Express Co., services.....	40
" 10.	To Wm. B. Burford, printing and stationery	128 10
" 10.	To D. O. Haynes & Co., books.....	3 00
" 10.	To The John Hopkins Press, American Chemical Journal, 1908.....	5 00
" 10.	To Dr. Helene Knabe, expense.....	6 65
" 10.	To Wm. Langsenkamp & Son, merchandise..	34 50
" 10.	To Parke, Davis & Co., merchandise.....	1 15
" 10.	To Pettis Dry Goods Co., merchandise.....	2 00
" 10.	To Pittman-Myers Co., merchandise.....	33 01
" 10.	To The Scofield-Pierson Co., books.....	16 90
" 10.	To G. E. Stechert & Co., books.....	9 35
" 10.	To Daniel Stewart Co., merchandise.....	24 25
" 10.	To Weber Drug Co., merchandise.....	10 00
" 10.	To H. E. Zimmer, merchandise.....	1 00
" 10.	To J. L. Anderson, expense.....	13 47
" 23.	To Bird Typewriter Co., balance on exchange of two typewriters	85 00
" 30.	To Dr. Helene Knabe, salary	116 67
" 30.	To Dr. Ada Schweitzer, salary.....	75 00
" 30.	To Mrs. F. M. Carper, salary.....	50 00
" 30.	To Dr. R. S. Rissler, salary.....	75 00

Apr. 30.	To Robt. P. Johnson, salary.....	\$45 00
" 30.	To J. H. Brewster, salary	100 00
" 30.	To Guy R. Coffin, salary.....	64 10
" 30.	To H. E. Barnard, expense.....	23 20
" 30.	To Bert W. Cohn, expense.....	6 67
" 30.	To Alfred W. Bruner, expense.....	76 37
" 30.	To Frank W. Tucker, expense.....	56 45
" 30.	To John Owens, expense.....	74 44
" 30.	To Guy R. Coffin, expense.....	32 62
May 29.	To Robert H. Bryson, P. M., postage stamps	200 00
" 29.	To Dr. Helene Knabe, salary	116 67
" 29.	To Dr. Ada Schweitzer, salary	75 00
" 29.	To Dr. R. S. Rissler, salary.....	75 00
" 29.	To Mrs. F. M. Carper, salary.....	50 00
" 29.	To Robt. P. Johnson, salary.....	45 00
" 29.	To J. H. Brewster, salary.....	100 00
" 29.	To Guy R. Coffin, salary.....	38 46
" 30.	To H. E. Barnard, expense.....	52 22
" 30.	To B. W. Cohn, expense.....	25 25
" 30.	To A. W. Bruner, expense.....	51 03
" 30.	To F. W. Tucker, expense.....	40 85
" 30.	To John Owens, expense.....	67 91
" 30.	To G. R. Coffin, expense.....	13 25
June 9.	To J. L. Anderson, expense.....	8 09
" 9.	To Aquos Distilled Water Co., merchandise.....	5 50
" 9.	To Balke & Krauss Co., lumber.....	75
" 9.	To Bausch & Lomb Optical Co., merchandise	64 28
" 9.	To Wm. B. Burford, printing and stationery	91 90
" 9.	To Central Supply Co., merchandise.....	2 27
" 9.	To Joseph Gardner, galvanized iron cans....	6 50
" 9.	To Pittman-Myers Co., merchandise.....	9 35
" 9.	To Scofield-Pierson Co., books.....	13 00
" 9.	To F. P. Smith & Co., merchandise.....	2 95
" 9.	To G. E. Stechert & Co., books.....	3 00
" 9.	To Vonnegut Hardware Co., merchandise....	1 15
" 20.	To H. E. Barnard, expense.....	28 70
" 30.	To Dr. Helene Knabe, salary.....	116 66
" 30.	To Dr. Ada Schweitzer, salary.....	75 00
" 30.	To Dr. R. S. Rissler, salary.....	75 00
" 30.	To Mrs. F. M. Carper, salary.....	50 00
" 30.	To Robt. P. Johnson, salary.....	45 00
" 30.	To J. H. Brewster, salary.....	100 00
" 30.	To G. R. Coffin, salary.....	22 47
" 30.	To J. J. Hinnman, salary.....	20 00
" 30.	To H. E. Barnard, expense.....	17 38
" 30.	To B. W. Cohn, expense.....	62 95
" 30.	To A. W. Bruner, expense.....	82 54
" 30.	To F. W. Tucker, expense.....	60 87
" 30.	To John Owens, expense.....	75 74
" 30.	To G. R. Coffin, expense.....	7 00

Total for third quarter.....

\$3,231 03

July	9.	To American Toilet Supply Co., laundry....	\$25 50
"	9.	To Aquos Distilled Water Co., merchandise.	2 50
"	9.	To J. L. Anderson, expense.....	16 09
"	9.	To Bausch & Lomb Optical Co., merchandise	6 03
"	9.	To Wm. B. Burford, printing and stationery	281 80
"	9.	To Adams Express Co., services.....	7 94
"	9.	To American Express Co., services.....	23 49
"	9.	To Wm. Langsenkamp & Son, merchandise..	12 50
"	9.	To Pittman-Myers Co., merchandise.....	31 31
"	9.	To G. E. Stechert & Co., text-books.....	3 80
"	9.	To the Scofield-Pierson Co., text-books.....	5 00
"	9.	To the Indianapolis Telephone Co., rent and tolls	27 65
"	9.	To the Central Union Telephone Co., rent and tolls	20 30
"	9.	To Indianapolis Tent and Awning Co., mer- chandise	9 00
"	23.	To H. E. Barnard, expense.....	28 83
"	31.	To Dr. Helene Knabe, expense.....	10 80
"	31.	To B. W. Cohn, expense.....	41 83
"	31.	To A. W. Bruner, expense.....	85 88
"	31.	To F. W. Tucker, expense.....	76 76
"	31.	To John Owens, expense.....	84 16
"	31.	To Dr. Helene Knabe, salary.....	116 67
"	31.	To Dr. Ada Schweitzer, salary.....	75 00
"	31.	To Dr. R. S. Rissler, salary.....	75 00
"	31.	To Mrs. F. M. Carper, salary.....	50 00
"	31.	To Robt. P. Johnson, salary.....	45 00
"	31.	To J. H. Brewster, salary.....	100 00
"	31.	To J. J. Hinman, salary.....	30 00
Aug.	21.	To J. L. Anderson, expense (drayage of gar- bage)	10 00
"	21.	To Robt. H. Bryson, P. M., postage stamps..	300 00
"	21.	To H. E. Barnard, expense.....	61 26
"	31.	To Dr. Helene Knabe, salary.....	116 67
"	31.	To Dr. Ada Schweitzer, salary.....	75 00
"	31.	To Dr. R. S. Rissler, salary.....	75 00
"	31.	To Mrs. F. M. Carper, salary.....	50 00
"	31.	To Robt. P. Johnson, salary.....	45 00
"	31.	To J. H. Brewster, salary.....	100 00
"	31.	To J. J. Hinman, salary.....	30 00
"	31.	To B. W. Cohn, salary.....	100 00
"	31.	To A. W. Bruner, salary.....	83 33
"	31.	To H. E. Barnard, expense.....	10 87
"	31.	To B. W. Cohn, expense.....	67 30
"	31.	To A. W. Bruner, expense.....	88 93
"	31.	To F. W. Tucker, expense.....	82 78
"	31.	To John Owens, expense.....	76 90
Sept.	15.	To Aquos Distilled Water Co., merchandise.	4 50
"	15.	To Bausch & Lomb Optical Co., merchandise	64 63
"	15.	To W. C. Brydon & Bro., labor.....	16 40

Sept. 15.	To Chas. F. Bretzman, merchandise.....	\$7 00
" 15.	To Wm. B. Burford, printing and stationery	241 67
" 15.	To Central Supply Co., merchandise.....	74
" 15.	To Dalton Lumber Co., lumber.....	14 08
" 15.	To U. S. Express Co., services.....	2 31
" 15.	To Evans & Fulton, file case.....	71 70
" 15.	To the Francis Pharmacy Co., merchandise.	14 95
" 15.	To Joseph Gardner, merchandise.....	17 40
" 15.	To Harmon & Hall, merchandise.....	3 65
" 15.	To Indianapolis Mortar and Fuel Co., mer- chandise	10 00
" 15.	To Wm. Langsenkamp & Son, merchandise..	14 50
" 15.	To L. E. Morrison & Co., merchandise.....	2 75
" 15.	To Pittman-Myers Co., merchandise.....	61 13
" 15.	To Porter-Vestal Electric Co., fan.....	13 00
" 15.	To E. H. Sargent & Co., merchandise.....	48 17
" 15.	To W. B. Saunders Co., books.....	7 00
" 15.	To the Scofield-Pierson Co., books.....	6 69
" 15.	To G. E. Stechert & Co., books.....	11 30
" 15.	To Stephens Photo Supply Co., books.....	2 75
" 15.	To Central Union Telephone Co., tolls.....	7 00
" 15.	To D. Van Nostrand Co., book.....	2 90
" 15.	To Victor Visible Typewriter Co., merchan- dise	1 50
" 15.	To Weber Drug Co., merchandise.....	30 75
" 15.	To Vonnegut Hardware Co., merchandise....	1 25
" 15.	To Dr. Helene Knabe, expense.....	19 17
" 15.	To J. L. Anderson, expense.....	16 65
" 15.	To Dr. J. N. Hurty, expense.....	72 80
" 15.	To Western Union Telegraph Co., tolls.....	2 29
" 15.	To H. E. Barnard, expense.....	50 07
" 16.	To Bausch & Lomb Optical Co., chemicals...	477 06
" 19.	To Aquos Distilled Water Co., chemicals....	167 34
" 24.	To American Toilet Supply Co., laundry....	19 80
" 24.	To Brannum-Keene Lumber Co., lumber....	10 30
" 24.	To Evans & Fulton, merchandise.....	100 00
" 24.	To Joseph Gardner, merchandise.....	16 10
" 24.	To Indianapolis Blue Print Co., merchandise	1 75
" 24.	To H. W. Johns-Manville Co., asbestos board	123 00
" 24.	To the H. Lieber Co., merchandise.....	2 50
" 24.	To Pittman-Myers Co., merchandise.....	348 43
" 24.	To Romadka Bros. Co., traveling bag.....	11 03
" 24.	To the U. S. Bank Safe Co., safe.....	35 00
" 24.	To John Wiley & Sons, text-books.....	11 20
" 24.	To Wm. Brydon, labor.....	6 40
" 24.	To Frank Leach, painting.....	178 50
" 24.	To Aquos Distilled Water Co., merchandise.	1 00
" 24.	To American Express Co., services.....	19 26
" 24.	To Adams Express Co., services.....	6 47
" 24.	To Indianapolis Telephone Co., tolls.....	4 10
" 24.	To Central Union Telephone Co., tolls.....	75

Sept. 24.	To Elmer & Amend, merchandise.....	\$49 68
" 28.	To H. E. Barnard, expense.....	120 72
" 28.	To B. W. Cohn, expense.....	63 55
" 28.	To A. W. Bruner, expense.....	79 64
" 28.	To F. W. Tucker, expense.....	69 63
" 28.	To John Owens, expense.....	65 57
" 28.	To Wm. B. Burford, printing and stationery.	161 09
" 28.	To E. H. Sargent & Co., merchandise.....	15 00
" 28.	To Pettis Dry Goods Co., merchandise.....	1 90
" 28.	To J. L. Anderson, expense.....	10 35
" 30.	To Weber Drug Co., merchandise.....	12 50
" 30.	To Hogan Transfer Co., freight and drayage	1 77
" 30.	To Dr. Helene Knabe, salary.....	116 66
" 30.	To Dr. Ada Schweitzer, salary.....	75 00
" 30.	To Dr. R. S. Rissler, salary.....	75 00
" 30.	To Mrs. F. M. Carper, salary.....	50 00
" 30.	To Robt. P. Johnson, salary.....	45 00
" 30.	To J. H. Brewster, salary.....	100 00
" 30.	To B. W. Cohn, salary.....	100 00
" 30.	To A. W. Bruner, salary.....	83 34
" 30.	To Ernest Elmore, salary.....	40 00
" 30.	To Franz Kropp, labor.....	22 00
Total for fourth quarter.....		<hr/> \$6,404 92
Appropriation		\$14,000 00
Expense first quarter		\$1,809 04
Expense second quarter		2,183 64
Expense third quarter		3,231 03
Expense fourth quarter		6,404 92
		<hr/> 13,628 63
Balance reverting to general fund.....		<hr/> \$371 37

FINANCIAL STATEMENT.

INDIANA STATE BOARD OF HEALTH—LABORATORY OF PURE FOOD AND DRUGS.

For Fiscal Year October 1, 1907, to September 30, 1908.

1907.		
Oct. 11.	To Pittman-Myers Co., drugs.....	\$65 84
" 31.	To B. W. Cohn, expense.....	90 99
" 31.	To A. W. Bruner, expense.....	83 86
" 31.	To F. W. Tucker, expense.....	74 12
" 31.	To John Owens, expense.....	60 97
" 31.	To G. R. Coffin, expense.....	1 30
" 31.	To H. E. Barnard, expense	41 26
" 31.	To H. E. Barnard, salary	208 33

Oct.	31.	To H. E. Bishop, salary.....	\$116 66
"	31.	To I. L. Miller, salary.....	83 33
"	31.	To Norris Thompson, salary.....	12 50
"	31.	To J. J. Hinman, salary.....	7 50
"	31.	To Will D. McAbee, salary.....	50 00
"	31.	To Mrs. Nellie M. Coney, salary.....	50 00
"	31.	To Lillian R. Chandler, salary.....	50 00
"	31.	To Phillip Brodus, salary.....	45 00
"	31.	To B. W. Cohn, salary.....	100 00
"	31.	To A. W. Bruner, salary.....	83 33
"	31.	To F. W. Tucker, salary.....	83 33
"	31.	To John Owens, salary.....	83 33
"	31.	To G. R. Coffin, salary.....	38 40
Nov.	2.	To Hogan Transfer Co., freight and drayage	2 72
"	2.	To Ballweg & Co., water carrier boxes.....	20 00
"	2.	To the Johnson-Woodbridge Co., merchandise	80
"	2.	To Joseph Gardner, six galvanized iron cans	5 70
"	2.	To G. E. Stechert & Co., text-books.....	9 21
"	2.	To the E. C. Harley Co., food samples.....	2 35
"	2.	To J. L. Anderson, expense.....	4 80
"	27.	To Henry W. Bennett, postage stamps.....	100 00
"	30.	To H. E. Barnard, salary	208 33
"	30.	To H. E. Bishop, salary	116 67
"	30.	To I. L. Miller, salary.....	83 33
"	30.	To Will D. McAbee, salary.....	50 00
"	30.	To Mrs. Nellie M. Coney, salary.....	50 00
"	30.	To Lillian R. Chandler, salary.....	50 00
"	30.	To Phillip Brodus, salary.....	45 00
"	30.	To B. W. Cohn, salary.....	100 00
"	30.	To A. W. Bruner, salary.....	83 33
"	30.	To F. W. Tucker, salary.....	83 33
"	30.	To John Owens, salary.....	83 33
"	30.	To G. R. Coffin, salary.....	44 87
Dec.	2.	To H. E. Barnard, expense.....	113 28
"	2.	To Bert W. Cohn, expense.....	69 66
"	2.	To A. W. Bruner, expense.....	65 13
"	2.	To Frank W. Tucker, expense.....	61 42
"	2.	To John Owens, expense.....	52 93
"	2.	To G. R. Coffin, expense.....	2 00
"	12.	To Aquos Distilled Water Co., merchandise.	2 50
"	12.	To Smith Premier Typewriter Co., machine repairs	88 50
"	12.	To Evans & Fulton, file case.....	66 80
"	12.	To Wm. B. Burford, printing and stationery.	14 50
"	12.	To The Johnson-Woodbridge Co., merchan- dise	2 35
"	12.	To Wm. Langsenkamp & Son, repairs.....	3 50
"	12.	To Pittman-Myers Co., merchandise.....	5 40
"	12.	To Daniel Stewart, merchandise.....	3 50
"	12.	To Baker & Co., repairs.....	7 80
"	12.	To G. M. Merrick, typewriter ribbons.....	2 25

Dec. 17.	To carpenter, carpenter work and repairs...	\$45 85
" 17.	To J. H. Brewster, expense.....	6 50
" 21.	To H. E. Bishop, expense.....	1 90
" 21.	To carpenter, carpenter work.....	38 40
" 28.	To carpenter, carpenter work.....	32 00
" 31.	To H. E. Barnard, salary	208 34
" 31.	To H. E. Bishop, salary	116 66
" 31.	To I. L. Miller, salary.....	83 34
" 31.	To Will D. McAbee, salary.....	50 00
" 31.	To Mrs. Nellie M. Coney, salary.....	50 00
" 31.	To Lillian R. Chandler, salary.....	37 50
" 31.	To Phillip Brodus, salary.....	45 00
" 31.	To B. W. Cohn, salary.....	100 00
" 31.	To A. W. Bruner, salary.....	83 34
" 31.	To F. W. Tucker, salary.....	83 34
" 31.	To John Owens, salary.....	83 34
" 31.	To G. R. Coffin, salary.....	38 46
Total for first quarter.....		\$4,239 31
By error in addition of voucher No. 89,654.....		18
		<hr/>
		\$4,239 13

1908.

Jan. 3.	To H. E. Barnard, expense.....	\$20 29
" 3.	To B. W. Cohn, expense.....	62 73
" 3.	To A. W. Bruner, expense.....	63 12
" 3.	To F. W. Tucker, expense.....	65 67
" 3.	To John Owens, expense.....	81 88
" 10.	To Adams Express Co., services October, November, December, 1907.....	14 50
" 10.	To American Express Co., services October, November, December, 1907.....	11 09
" 10.	To U. S. Express Co., services October, November, December, 1907.....	60
" 10.	To American Toilet Supply Co., laundry....	16 05
" 10.	To Aquos Distilled Water Co., water.....	3 50
" 10.	To Wm. B. Burford, printing and stationery	21 26
" 10.	To Central Supply Co., merchandise.....	21 27
" 10.	To Harmon & Hall, merchandise.....	42 30
" 10.	To The Johnson-Woodbridge Co., merchandise	80
" 10.	To H. Lieber Co., merchandise.....	3 30
" 10.	To G. M. Merrick, typewriter repairs.....	2 25
" 10.	To Pioneer Brass Works, merchandise.....	12 00
" 10.	To Vonnegut Hardware Co., merchandise...	2 50
" 10.	To J. L. Anderson, expense	68
" 11.	To J. L. Brewster, expense	95
" 11.	To merchandise	2 05
" 18.	To Brydon Bros., carpenter work.....	38 40
" 18.	To H. E. Barnard, expense, sundry.....	4 80
" 18.	To I. L. Miller, expense.....	1 80

Jan.	18.	To Brydon Bros., carpenter work.....	\$38 40
"	25.	To H. E. Bishop, expense.....	2 92
"	25.	To Brydon Bros., carpenter work.....	38 40
"	31.	To H. E. Barnard, salary	208 33
"	31.	To H. E. Bishop, salary	116 67
"	31.	To Ivy L. Miller, salary.....	83 33
"	31.	To Will D. McAbee, salary.....	50 00
"	31.	To Mrs. Nellie M. Coney, salary.....	50 00
"	31.	To Edith Hoffman, salary.....	40 00
"	31.	To Philip Brodus, salary.....	45 00
"	31.	To Bert W. Cohn, salary.....	100 00
"	31.	To A. W. Bruner, salary.....	83 33
"	31.	To Frank W. Tucker, salary.....	83 33
"	31.	To John Owens, salary.....	83 33
"	31.	To G. R. Coffin, salary.....	50 00
Feb.	1.	To Brydon Bros., carpenter work.....	12 80
"	3.	To H. E. Bishop, expense.....	17 11
"	3.	To B. W. Cohn, expense.....	79 02
"	3.	To A. W. Bruner, expense.....	76 91
"	3.	To F. W. Tucker, expense.....	71 67
"	3.	To John Owens, expense.....	87 52
"	3.	To G. R. Coffin, expense.....	16 00
"	15.	To Badger Furniture Co., merchandise.....	30 00
"	15.	To Central Supply Co., merchandise.....	24 21
"	15.	To Joseph Gardner, merchandise.....	52 99
"	15.	To Harmon & Hall, merchandise.....	9 88
"	15.	To Wm. Langsenkamp & Son, merchandise.....	85 35
"	15.	To Pittman-Myers Co., merchandise.....	156 65
"	15.	To H. E. Barnard, expense.....	57 13
"	15.	To J. L. Miller, expense.....	7 97
"	15.	To J. H. Brewster, expense.....	1 89
"	15.	To H. E. Bishop, expense.....	4 80
"	15.	To Aquos Distilled Water Co., merchandise.....	5 00
"	15.	To Sanborn-Marsh Electric Co., merchandise.....	5 50
"	15.	To E. H. Sargent & Co., Bunsen burners....	5 50
"	15.	To Bausch & Lomb Optical Co., balance on merchandise	119 74
"	29.	To H. E. Barnard, salary	208 33
"	29.	To H. E. Bishop, salary	116 67
"	29.	To I. L. Miller, salary.....	83 33
"	29.	To Will D. McAbee, salary.....	50 00
"	29.	To Mrs. Nellie M. Coney, salary.....	50 00
"	29.	To Edith Hoffman, salary.....	40 00
"	29.	To Philip Brodus, salary.....	45 00
"	29.	To B. W. Cohn, salary.....	100 00
"	29.	To A. W. Bruner, salary.....	83 33
"	29.	To F. W. Tucker, salary.....	83 33
"	29.	To John Owens, salary.....	83 33
"	29.	To G. R. Coffin, salary.....	60 68
Mar.	2.	To B. W. Cohn, expense.....	65 36
"	2.	To A. W. Bruner, expense.....	69 06

Mar.	2.	To F. W. Tucker, expense.....	\$83 57
"	2.	To John Owens, expense.....	70 42
"	2.	To G. R. Coffin, expense.....	8 37
"	2.	To H. E. Barnard, expense	90 66
"	31.	To H. E. Barnard, salary	208 34
"	31.	To H. E. Bishop, salary	116 66
"	31.	To I. L. Miller, salary.....	83 34
"	31.	To Will D. McAbee, salary.....	50 00
"	31.	To Mrs. Nellie M. Coney, salary.....	50 00
"	31.	To Edith Hoffman, salary.....	40 00
"	31.	To Phillip Brodus, salary.....	45 00
"	31.	To B. W. Cohn, salary.....	100 00
"	31.	To A. W. Bruner, salary.....	83 34
"	31.	To F. W. Tucker, salary.....	83 34
"	31.	To John Owens, salary.....	83 34
"	31.	To G. R. Coffin, salary.....	67 31
"	31.	To B. W. Cohn, expense.....	47 68
"	31.	To H. E. Barnard, expense.....	27 81
"	31.	To A. W. Bruner, expense.....	70 67
"	31.	To F. W. Tucker, expense.....	55 62
"	31.	To John Owens, expense.....	70 85
"	31.	To G. R. Coffin, expense.....	33 83
Total for the second quarter.....			\$5,203 04
Apr.	30.	To H. E. Barnard, salary	\$208 33
"	30.	To H. E. Bishop, salary	116 67
"	30.	To Ivy L. Miller, salary.....	83 33
"	30.	To Will D. McAbee, salary.....	50 00
"	30.	To Mrs. Nellie M. Coney, salary.....	50 00
"	30.	To Edith Hoffman, salary.....	40 00
"	30.	To Phillip Brodus, salary.....	45 00
"	30.	To Bert W. Cohn, salary.....	100 00
"	30.	To A. W. Bruner, salary.....	83 33
"	30.	To Frank W. Tucker, salary.....	83 33
"	30.	To John Owens, salary.....	83 33
May	30.	To H. E. Barnard, salary	208 33
"	30.	To H. E. Bishop, salary	116 67
"	30.	To Ivy L. Miller, salary.....	83 33
"	30.	To Will D. McAbee, salary.....	50 00
"	30.	To Mrs. Nellie M. Coney, salary.....	50 00
"	30.	To Edith Hoffman, salary.....	40 00
"	30.	To Phillip Brodus, salary.....	45 00
"	30.	To B. W. Cohn, salary.....	100 00
"	30.	To A. W. Bruner, salary.....	83 33
"	30.	To F. W. Tucker, salary.....	83 33
"	30.	To John Owens, salary.....	83 33
June	30.	To H. E. Barnard, salary	208 34
"	30.	To H. E. Bishop, salary	116 66
"	30.	To I. L. Miller, salary.....	83 34
"	30.	To Will D. McAbee, salary.....	50 00

June 30.	To Mrs. Nellie M. Coney, salary.....	\$50 00
" 30.	To Edith Hoffman, salary.....	40 00
" 30.	To Phillip Brodus, salary.....	45 00
" 30.	To Bert W. Cohn, salary.....	100 00
" 30.	To A. W. Bruner, salary.....	83 34
" 30.	To F. A. Tucker, salary.....	83 34
" 30.	To John Owens, salary.....	83 34
Total for the third quarter.....		\$2,830 00
July 31.	To H. E. Barnard, salary.....	\$208 33
" 31.	To H. E. Bishop, salary.....	116 67
" 31.	To I. L. Miller, salary.....	83 33
" 31.	To Will D. McAbee, salary.....	50 00
" 31.	To Mrs. Nellie M. Coney, salary.....	50 00
" 31.	To Edith Hoffman, salary.....	40 00
" 31.	To Phillip Brodus, salary.....	45 00
" 31.	To Bert W. Cohn, salary.....	100 00
" 31.	To A. W. Bruner, salary.....	83 33
" 31.	To F. W. Tucker, salary.....	83 33
" 31.	To John Owens, salary.....	83 33
Aug. 22.	To H. E. Barnard, expense National Pure Food Convention.....	49 30
" 31.	To H. E. Barnard, salary.....	208 33
" 31.	To H. E. Bishop, salary.....	116 67
" 31.	To Ivy L. Miller, salary.....	83 33
" 31.	To Will D. McAbee, salary.....	50 00
" 31.	To Mrs. Nellie M. Coney, salary.....	50 00
" 31.	To Edith Hoffman, salary.....	40 00
" 31.	To Phillip Brodus, salary.....	45 00
" 31.	To F. W. Tucker, salary.....	83 33
" 31.	To John Owens, salary.....	83 33
Sept. 30.	To H. E. Barnard, salary.....	208 34
" 30.	To H. E. Bishop, salary.....	116 66
" 30.	To I. L. Miller, salary.....	83 34
" 30.	To Will D. McAbee, salary.....	50 00
" 30.	To Mrs. Nellie M. Coney, salary.....	50 00
" 30.	To Edith Hoffman, salary.....	40 00
" 30.	To Phillip Brodus, salary.....	45 00
" 30.	To Frank W. Tucker, salary.....	83 34
" 30.	To John Owens, salary.....	83 34
Total for the fourth quarter.....		\$2,512 63
Appropriation.....		\$15,000 00
Total for first quarter.....		\$4,239 13
Total for second quarter.....		5,203 04
Total for third quarter.....		2,830 00
Total for fourth quarter.....		2,512 63
		14,784 80
Amount reverting to the general fund.....		\$215 20

Minutes of Transactions 1908

FIRST QUARTERLY MEETING OF THE INDIANA STATE BOARD OF HEALTH FOR 1908.

AFFAIRS CONSIDERED OF THE QUARTER ENDING DECEMBER 31, 1907.

JANUARY 10, 1908.

Called to order by President Tucker.

Present: Drs. Tucker, McCoy, Davis, Wishard, Hurty.

Minutes of the last Regular Quarterly Meeting, held October 11, 1907, and of the Special Meeting, held October 25, 1907, read and approved.

Secretary's report read and ordered spread of record.

REPORT OF SECRETARY FOR THE FISCAL QUARTER ENDING DECEMBER 31, 1907.

The new Registration Law was put into actual operation October 1, 1907. It went into force April 10th, but it was impossible to prepare the blanks and to instruct the health officers over the State in less time, and hence the actual operation of the law began on the date mentioned. The first effort to collect births was very encouraging, although the returns were not as accurate as were desired. The first month's experience discovered two or three weak spots in the instructions, and proper changes were made. In November the birth reports were much better than in October, and in December still better. It is certainly true that beginning January 1, 1908, which is the true date of the beginning of birth registration in Indiana, that birth returns will be sufficiently accurate to classify the State according to the requirements of the United States Census Bureau.

One change has been made upon the birth certificates, by virtue of the authority given to the Secretary, to which I wish to call attention, and this is, the question is asked: "Were precautions taken against Ophthalmia neonatorum?" We are receiving numerous answers to this question upon return certificates, although in the majority of instances, physicians pay no attention to the question. It is thought that this will call the attention of physicians to the importance of taking precautions against the disease

named and in that way do good. In any event it will give us figures upon which to make conclusions. The secretary of the National Ophthalmological Society has commented favorably upon this question, referring to Ophthalmia neonatorum, which is found upon the birth certificates of the Indiana State Board of Health.

The United States Census Bureau lays down the rule that the birth certificate is not complete without the given name of the infant, and this necessitates a supplemental report, provided the infant's name is not given when the original certificate is made out. We have found that it is difficult indeed to secure the given name of an infant through the supplemental report method. However persistence will, of course, be fruitful of good results. Instead of requiring physicians to make out the supplemental report, which is not at all practical, appeal has been made directly to the mothers. When, therefore, a birth blank is now received and the given name of the child is not recorded, a supplemental certificate is filled out from the original certificate, all excepting the given name. It is then sent to the mother with the following letter:

Dear Madam:

We have received at this office for legal record the birth certificate of your baby. Please fill out the enclosed blank where child's name is called for and return to us in the stamped and addressed envelope, and please correct any errors, either of dates or spelling of the names.

This legal record of the birth and name of your child is of great importance to you, to your child and to the State. The record is frequently needed by those who least expect it. Some day it may be required in court to prove your child's parentage, or to prove inheritance of property, or to prove right to insurance or pension, or to prove legitimacy. Every mother should demand that her child's birth be legally recorded as the law commands, and to ask the physician or midwife to carefully look after the matter, for the duties of the physician or midwife are not all fulfilled until they make report. Women will do wisely to discuss with each other the importance to themselves and to their children of legal records of births and deaths.

If at any time the State Board of Health can help you, please write to us. Thanking you for your reply and wishing you all happiness, I am

Very truly yours,

J. N. HURRY,
Secretary.

Answers are generally secured, although strange to say in some instances, mothers seem indifferent and do not reply. When it is impossible to secure the given name of child, of course, the certificate passes on record without it.

Our correspondence during the quarter was not so heavy as in

the preceding quarter. This is probably because of the holidays, when people are not paying much attention to hygiene and their health, but on the contrary, are doing those things which are not conducive to health.

The following is a table after the character of tables which are presented quarterly, showing the conditions concerning small-pox during the quarter, and after the smallpox table, there is given the usual typhoid fever table of comparisons:

SMALLPOX COMPARISON FOR FOURTH QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
October, 1906	118	3	9
October, 1907	75	0	7
November, 1906	216	0	14
November, 1907	107	0	14
December, 1906	393	1	19
December, 1907	207	0	18
Total, 1906	727	4	42
Total, 1907	389	0	39

TYPHOID FEVER COMPARISON FOR FOURTH QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
October, 1906	782	150	73
October, 1907	562	140	
November, 1906	790	135	73
November, 1907	440	76	60
December, 1906	674	79	50
December, 1907	780	69	54
Total, 1906	2,186	364	196
Total, 1907	1,782	285	114

VISITS AND INSPECTIONS.

Fourteen visits and inspections were made by the Secretary during the quarter, one inspection by Miss May Stuart, and two by Dr. Knabe.

October 2, Elwood, Miss Stuart, to look up records of local secretary on account of illegal burials.

October 4, Eminence, to investigate schoolhouse.

October 6, Richmond, on account of survey of county in conjunction with county health officer and county board of health.

October 7, Franklin, account of meeting with school superintendent and school board.

October 11, Elwood, to meet the prosecuting attorney and county health officers of Madison County, to enter prosecutions on account of illegal burials.

October 12, Danville, to consult with county secretary and with town health authorities.

October 15, Richmond, to meet with and read a paper before the Wayne County Medical Society.

October 18, Danville, to meet with and read a paper before the Hendricks County Medical Society.

October 22, Muncie, to attend the Delaware County Medical Society, and read a paper before the same.

October 29, Plainfield, account of diphtheria.

November 5, Bloomington, to give public lecture in opera house under auspices of local board of health, advocating the installing of sewers and other sanitary conditions.

November 26, Lawrenceburg, account of unsanitary conditions in schoolhouse, and to confer with county health officer and county board of health.

November 30, Martinsville, to attend County Teachers' Institute and deliver an address on public health.

December 11, Lafayette, to address the students of Purdue University on public health affairs.

December 14, Hammond, to confer with local health officer and incidentally to deliver an address in Chicago before a conference of the Chicago Physicians' Club and the Chicago Lawyers' Club.

December 20, Greencastle, to investigate a nuisance which the traction company and the owner of property wished the State Board to arbitrate.

December 28, Waveland, to deliver a lecture before the Montgomery County Farmers' Institute, concerning the public health. The following are full accounts of the visits above recorded:

Eminence.—October 4: In April, 1907, the State Board of Health condemned the schoolhouse at Eminence, the sanitary survey having been made by Dr. T. Victor Keene. At the same time, notice was served upon the authorities that when a new schoolhouse was built, it should conform to the rules governing the sanitary conditions of schoolhouses. The trustee went ahead and built the schoolhouse, paying very little attention to the rules. It was finished without ventilating ducts and without a proper sanitary heating and ventilating apparatus. The Secretary visited Eminence, met the trustee and one member of the advisory board and

found them obdurate. They were determined in their ignorance to surround the children with unsanitary conditions. They were warned that prosecution would follow if they did.

On November 1 the schoolhouse was duly opened and the school-rooms heated with ordinary stoves. The visit was not productive, but the conditions and circumstances were made plain. Upon application to the Attorney-General how to enforce the rules, we were instructed to induce some citizen of Eminence to bring action for a mandate to compel obedience to the rule. Immediately a letter was written to Mr. Michael Miller, who was known to be in favor of a sanitary schoolhouse, asking him as a citizen of the district to bring suit, promising that the State Board of Health would back him in every respect. To the present date, no reply has been received, but the Secretary is confident that some citizen of the district will be found, who is sufficiently interested in school hygiene to become active and help in the enforcement of the law.

Richmond.—October 6: I visited Richmond at the petition of the secretary of the county board of health, Dr. Marvel, to make a tour of the county and conduct sanitary inspections. We left Richmond at 9 a. m. on October 6, in an automobile which was furnished by the county board of health. The diphtheria epidemic at White Water was first investigated. A citizens' meeting was held in the schoolhouse, and every phase of the epidemic was discussed. Many accusations were made, but no citizen could be found who would put his statements in writing, accusing the local physician of having carelessly transmitted diphtheria. The prosecutor afterward said there was no chance for prosecution, and therefore the matter was dismissed, after giving a short talk to the high school students upon diphtheria, its prevention and sanitary management.

Leaving White Water, I visited five other places, making sanitary inspections and issuing orders as to what should be done. Altogether, the visit to Wayne County was certainly attended with good results.

Franklin.—October 7 I visited Franklin to deliver an address before the high school about the State Board of Health and its work, and to meet with the school board and school superintendent. A new schoolhouse is contemplated at Franklin, and the result of the conference was to secure from the board a promise that in another year a new building would be begun.

Elwood.—On October 11 I went to Elwood to adjust the mat-

ters pertaining to the illegal burials. Dr. Conrad, health officer of the county, and the prosecutor accompanied me. Investigation of the books of the local health officer, who certainly had not been careful in collecting vital statistics, and also investigating the books of the local undertakers, disclosed the fact that there had been 165 illegal burials in one year. All had been duly recorded on certificates, but had not been registered legally, and the burials had been made without permits. After discussion of all the facts, which took several hours, the two undertakers guilty of making the illegal burials promised to plead guilty to one or two charges and not stand trial. This compromise was accepted by the prosecutor for the district and duly settled.

Danville.—October 12 I visited Danville, to consult with the county secretary of the county board of health. We considered minor nuisances and the violation of quarantine in two instances. The prosecutor was informed in regard to the quarantine violations and settled them to his own satisfaction.

Richmond.—October 15 I went to Richmond to attend the Wayne County Medical Society, which met on that day at the Eastern Insane Hospital. My paper was entitled "Mexican National Hospital." It was kindly received, and after the reading of the other papers and adjournment of the society, I made a sanitary inspection of the hospital, and said investigation can be set forth in one word, "Excellent." Not a single place was found where a sanitary suggestion could be made.

Danville.—October 18 I attended the monthly meeting of the Hendricks County Medical Society, to read a paper entitled "Vital Statistics." The paper was well received and a vote of thanks given and also a vote of confidence in and support of the State Board of Health was unanimously passed.

Muncie.—October 22 I went to Muncie to read a paper before the Delaware County Medical Society, and to take part in the discussions. The title of the paper was "How May the Busy Practitioner Aid in Public Health Work?" This paper reviewed the work of the State Medical Society in establishing a State Board of Health and securing the present health laws, and then went into details in regard to the methods of collecting vital statistics, tabulating and analyzing them. The physicians' duties were also discussed. The paper was well received and a vote of thanks given.

Plainfield.—October 29 I visited Plainfield upon invitation of the local health authorities and of Mr. York, superintendent of the

Indiana School for Boys. Diphtheria had prevailed at Plainfield for some time, with twelve or fifteen severe clinical cases appearing, and one death. The people were much roused and requested aid from the State Board. I met with the town board and teachers and reviewed the methods of diphtheria prevention, advising the closure of the schools, after cultures were taken from the throats of every child that appeared to be ill. One hundred and twenty cultures were taken, 45 of which proved to be positive. At the Reform School there were seven cases of clinical diphtheria found, and upon culture 12 cases were discovered. All cases were quarantined in both the town and the institution, and the usual precautions taken against the spread of infection.

Bloomington.—November 5: For many years local civic societies of Bloomington have been agitating the building of sewers and gathering of garbage and other sanitary measures. A public meeting was called for November 5 at the opera house, where these subjects might be discussed, and the Secretary was invited to deliver an address. The importance of sewers was discussed and illustrated; also the importance of garbage disposal. The point was made that no city could engage in a work that was more profitable than that of conserving the public health. The opera house was crowded, the lecture was well received and a vote of thanks was passed. It is believed this meeting will make the beginning of much-needed, much-desired advancement in Bloomington.

Lawrenceburg.—November 26: Measles had been prevailing at Lawrenceburg for some time, and the people resisted the efforts of the local health officers to suppress the disease. In addition, certain sanitary improvements were contemplated for the high school building, and for both these reasons, a visit and advice were requested from the State Board of Health. The city board of health and mayor were met upon my arrival, and subsequently the high school was addressed and many citizens were present. The general subject of infectious diseases and their prevention was explained, and also the very great importance of having sanitary schoolhouses. The citizens present all agreed they would lend their influence and their efforts in favor of sanitary work. The sanitary improvements for the school house were agreed upon and will very soon be made.

Martinsville.—November 30: The County Teachers' Institute met upon this date, and the Secretary was invited to deliver an address upon school hygiene. The meeting was held in the audito-

rium of the new high school building, and about 250 teachers were present. The whole subject of school hygiene was illustrated and discussed. The teachers unanimously passed a resolution of thanks and of commendation of the sanitary advice given, and said advice was formally adopted as the final opinion of the institute.

Lafayette.—December 11: Every Wednesday at 11 o'clock there is held at Purdue University what has been called "Convocation." Upon this occasion all of the students are gathered in Fowler Hall, which is the large auditorium connected with the University, and addresses are delivered. Your secretary was the invited speaker upon December 11. About 800 students were present and the subjects of personal and public hygiene were discussed for a period of forty minutes. The organization and work of the State Board of Health was also explained.

Hammond.—December 13: Typhoid fever prevailed at Hammond in October and November, and continued into December. Public discussion of the subject was very considerable, and the local health authorities and also the newspapers united in a demand for a visit from the State Board of Health. Upon arrival, with the health officer, Dr. J. T. Clark, I made a survey of that part of the city where the vital statistics showed the typhoid fever to generally prevail. In this district, open vaults and dilapidated outhouses were plentiful. This fact alone would explain the existence of typhoid fever, for where these exist, typhoid conditions also exist. It was believed by many that the public water supply was polluted, but it was found that very few drink the public water, and besides the five examinations made consecutively, through a period of ten days, did not discover anything wrong with the water. It, therefore, was my belief that the typhoid fever originated in the conditions above set forth. This opinion was formally delivered to the local authorities, who were urged to pass an ordinance requiring the periodically cleaning of vaults and the construction of fly-proof outhouses.

On the evening of the 13th I proceeded to Chicago and delivered an address before a conference of the Chicago Physicians' Club and the Chicago Law Club. The meeting was held at the Great Northern Hotel, and between 300 and 400 physicians, lawyers and other citizens were present. My address referred to the statutes and the work done in Indiana for the elimination of degenerates. A brief history of the sterilization law, and of the marriage law was given and their workings explained. The address

was received very favorably and its main features were disseminated by the society members. Over a score of letters of inquiry have been received from all parts of the United States in regard to the facts presented in my paper. These letters were from authors, legislators, lawyers and physicians. Some of them expressed surprise that laws were in existence which aimed at the elimination of degenerates by sterilization and the restriction of marriage. No other State has such laws and their existence has brought great prominence to Indiana.

Greencastle.—December 20: For some time at Greencastle there has been complaint made by the traveling public concerning sewage and bad odors at the traction company's station. Letters of inquiry to the traction company elicited the statement that the nuisance was not upon their property, but upon the property of one Mr. Hays. An attorney and the official of the traction company expressed his wish that the health authorities would give relief. Finally the letters and personal visits became so numerous that I thought it best to visit Greencastle, and it happened that upon that very day a subpoena was issued against the Secretary to appear at Greencastle, on account of the trial of a groceryman for exposing articles of food contrary to the rules of the State Board of Health. The said suit was brought by one Dr. Preston, and not by the State Board of Health. Upon arrival at Greencastle I immediately repaired to the court house, and after discussion of the question concerning the exposure of foods with the prosecuting attorney for the defense, the groceryman, Mr. Zeiss, concluded to plead guilty.

After this I visited the traction company's station and inspected the nuisance. I found the statement of the Union Traction Company to be true, for the nuisance did exist upon adjoining property. A foul and reeking vault distributed its contents against the basement walls of the traction station. When the windows were open upon that side of the waiting room, bad odors were very pronounced. The whole matter was discussed with the local attorney for the Union Traction Company, Senator T. T. Moore, and also with Mr. Hays, the owner of the property. It was soon apparent that a compromise was impossible, and the prosecuting attorney at last advised that we join with him in bringing a suit against both parties for maintaining a nuisance, with the hope that the court would decide the question finally. I suppose the prosecutor will pursue this course.

Waveland.—December 28: The Montgomery County Farmers' Institute met at Waveland, December 27 and 28, and the State Board of Health was invited to send a representative to speak to the institute upon the subject of "Health on the Farm." Accordingly I went to Waveland, and in the evening in the opera house addressed an audience which followed very carefully. The lecture was illustrated with latern slides and was favorably received, for a unanimous vote of thanks was given.

Reports of visits of Miss Sturant and Dr. Knabe are appended as part of the Secretary's report:

ELWOOD.

BY MISS STUART.

Elwood.—On October 28 I visited Elwood, Madison County, to investigate the cause of the low death rate of that city, and found that the city health officer, Dr. Thos. S. Owen, had his books in good shape, but that the undertakers have been making burials for more than a year without burial permits. From the first of January there have been 162 deaths in the city, and of that number six permits were issued, and those because the bodies were to be shipped out of the city and were absolutely necessary. The two undertakers, Mr. E. M. Clark and Mr. M. E. Winings, were both aware that every one of these burials had been illegal, and both gentlemen said they would attend to securing a permit for every burial in the future. The population of the city was also accountable for the low death rate, as it had been given as 19,232 when they only have 14,858, as estimated by the school census. Some of their reports had also been sent in late and were not included in the statistics as printed in the Monthly Bulletin, and this consequently caused the low death rate. All births and deaths were recorded.

At Alexandria, where a low death rate was given, the two undertakers, E. E. Davis and J. P. Condo, were also making burials without permits, although not as many as at Elwood. The city health officer, Dr. A. R. Schaeffer, had signed up blank permits and given them to the two undertakers, as he had been out of the city on account of sickness. The city board of health had refused to get the necessary record books for the secretary, and he has been unable to make the records of births, deaths and contagious diseases as required, but is still using the old books. He claims that he has no support from his board and is practically helpless in enforcing the law. He reports very little sickness and few deaths for the city.

REPORT OF INVESTIGATION AT PLAINFIELD, IND.

BY DR. H. KNABE.

This investigation was conducted partly at Plainfield and partly at the State Laboratory, where the incubation of cultures and the microscopical examinations were done. As far as I am able to determine, the physicians at Plainfield observed the usual number of sore throats during this fall, and, as was also to be expected, these cases were diagnosed as pharyngitis, tonsillitis, etc. Some of the physicians residing at Plainfield treated a number of very severe cases of tonsillitis without in the least suspecting diphtheria. On October 20 there was received at the State Laboratory two cultures for microscopical examination, and both showed Klebs-Loeffler bacilli. On making inquiries, as usual when we find the first case of diphtheria from any new locality, we learned that one of the patients, Mr. T. L. W., age 31 years, was an officer at the Indiana School for Boys. Where he had acquired the infection could not be determined with certainty. The other patient, J. S., age 7 years, had, a week before he became ill, been in the company of a colored boy who had at that time a very sore throat and complained of feeling sick. It is probable that both of these patients were infected from the colored boy, because the latter was working in the force of Mr. T. L. W. Up to this time no cases had been reported from the Plainfield public school, which the boy J. S. attended, but within a few days several other children developed diphtheria, and soon the infection became quite general. Since the Plainfield schools received pupils from the surrounding towns and country districts the question of preventing the spread of diphtheria to other places had to be considered, and for this purpose it seemed best to meet as many of the physicians as possible, whose practice extends near Plainfield, to discuss the situation and warn them of the danger threatening their communities. On Wednesday, November 13, I went to Plainfield to attend a meeting of the Physicians' Protective Association, composed of physicians from Plainfield, Coatesville, Belleville, etc. Nine of the twelve members of this association were present. Dr. Ernest Cooper reported a case of diphtheria occurring in a three-year-old child during May, 1907. This case was peculiar, in so far as nephritis was the condition for which relief was sought, the pharyngeal symptoms two weeks before having escaped notice because they caused practically no discomfort. Cultures from the throat of the little patient were examined at that time in the State Laboratory and the diagnosis of diphtheria verified. The time of quarantine in this case was unusually long, because Klebs-Loeffler bacilli could be cultivated from the secretions of the nose for more than six weeks. In the discussion of this case the arguments made by the various physicians clearly demonstrated the wide difference of opinion with regard to virulence, presence of membrane, etc., existing even in the medical profession. Finally all physicians present agreed to send specimens, not only from their patients suspected of having diphtheria, but also from every case which would otherwise be treated as mild pharyngitis or tonsillitis. The results of this meeting have been most satisfactory. Every one of the physicians present, as well as the other members of the association who were not present at this session, were supplied the next day with diphtheria outfits, many of which were promptly returned to the laboratory with specimens containing Klebs-

Loeffler bacilli, proving that the same infection was gradually spreading to other localities. As a consequence of this one evening's work many cases of diphtheria which would otherwise have passed unrecognized are now correctly diagnosed and properly treated, as well as restrained from exposing others to infection. Conditions at Plainfield, however, went from bad to worse. People, in their ignorance, instead of obeying the rules of quarantine, went about their business as usual, openly defying the orders of the health officer, and even permitted their children known to have diphtheria, although in mild form, to attend the public school. Persons who were perfectly sure that they were infected with diphtheria would go about with very inflamed throats, and only when the symptoms became too severe for endurance would they go to a physician for relief. Most of this general demoralization has no doubt come from the fact that people do not seem to realize the danger of such action to themselves as well as to others. We still find even physicians adhering to the old idea that diphtheria must needs be accompanied by a pseudo-membrane, and that the patient is well and perfectly safe to be at large as soon as the inflammatory symptoms are allayed.

To ascertain how much infection was in the public school I went to Plainfield, November 25, taking with me enough material to inoculate cultures from a large number of children.

The school building having been recently inspected, I confined myself entirely to an examination of the pupils in all rooms where there had been many absentees on account of "colds," etc. The four physicians residing at Plainfield, Drs. Cooper, Carter, Ragan and Thomas, whose courtesy I highly appreciate, assisted in this work. In the primary class I inoculated a cotton swab from the throat of the teacher as well as from the throat of each child present. I visited, further, all classes containing children known to have been exposed to diphtheria, inspecting all and taking a specimen from each child whose tonsils and pharynx showed signs of inflammation. Many of these children acknowledged having been affected with sore throat for several days, some as long as a week. The number of swabs inoculated from pupils of the Plainfield public school November 25, 1907, was 98. Blood serum cultures prepared from these swabs at the State Laboratory were found to give a "positive" result in 45 cases, 45.9 per cent.; i. e., the bacteria corresponded morphologically as well as in culture to Klebs-Loeffler bacilli. This result was accordingly reported to the health officer at Plainfield and quarantine advised, regardless of the fact that some of the children were apparently in fair health, though most of them were affected with very slight "colds."

An additional number of 22 cultures was prepared by the local health officer at Plainfield, Dr. Ernest Cooper, from pupils of the Plainfield Academy, and an examination of three of them were found positive. The reason for this low percentage is to be found in the fact that all of the academy pupils are over 16 years of age and pay more attention to their personal hygiene.

While some persons objected to being quarantined and censured us because of our stringency in this matter, nevertheless I believe that when an infection is known to have been so widely disseminated as was the case in Plainfield it is not the time to argue about the question of the virulence

of such bacteria, but adopt radical measures to protect the lives of non-immune persons who might possibly come in contact with those infected.

Although a number of physicians consider this epidemic as of a very mild type, I cannot altogether agree with them, because several very severe cases with laryngeal involvement have occurred. Many families have been spared the loss of some of their members by the prompt action of the physicians, who, recognizing the danger, gave large doses of antitoxin to the patient before the disease had progressed too far and insisted upon the immunization of persons known to have been exposed. Had this epidemic occurred at a time when antitoxin was still unknown its severity would probably have induced a number of persons to more willingly obey the rules of quarantine.

I was impressed by the fact that so many children were permitted by their parents to go about with tonsils nearly touching the uvula on either side, the enlarged crypts filled with cheesy material, a veritable hotbed for all kinds of bacterial infection. A number of cases of adenoids were also observed.

Taking the Plainfield public school, which is patronized by a very good class of citizens, as an average, something should certainly be done in the way of regular school inspection as well as in the education of parents in general. These children, permitted to grow up with their respiratory apparatus in such condition, will not only show more or less of the so-called "adenoid face," but with their disturbed metabolism consequent upon the interference with proper oxygenation of the blood supply, they will readily fall a prey to tuberculosis, in spite of the fact that many of them live in very hygienic surroundings.

The fact that the severity of post-diphtheritic paralysis is in no proportion to the extent of the symptoms referable to the respiratory tract was very well borne out in some cases observed during this epidemic. Through the courtesy of Dr. Carter I was fortunate enough to see a very peculiar case. The patient was a young woman who had suffered several weeks before from a very sore throat. She applied home remedies and it subsided, but she had not felt well since. November 25, at 1 p. m., the doctor was called in haste because Miss S. had developed paralysis. We found the patient with slight pharyngitis and a facial paralysis, the right side being affected. The conjunctiva of the right eye was very much inflamed, with existing ptosis and inability to completely close the eye. I suggested the possibility of diphtheritic conjunctivitis, although there was no evidence of membrane formation upon the conjunctiva, the symptoms not having appeared until the forenoon of the same day, so cotton swabs were inoculated from the conjunctiva as well as the pharynx of the patient. Subsequently the culture made from the pharynx proved negative, but that from the eye developed a pure culture of Klebs-Loeffer bacilli. A few days later we were able to cultivate the diphtheria bacilli also from the nose. Whether the infection had extended upward through the lachrymal duct, or been inoculated directly into the eye, is of course a matter of speculation. This case was of peculiar interest to me because during October and November we had repeatedly received specimens from cases of diphtheria, as proved by microscopical examination, with a statement from the attending physician that the patient was suffering from in-

tense conjunctivitis, and we had not so far been able to get a culture from the eye of any one of these cases. I am informed that the conjunctivitis in this case was controlled in a reasonably short time, but the paralysis lasted three weeks.

We have received at this laboratory a number of specimens from Plainfield during the month of December, but many of them were for release from quarantine, and there seems to have been no wholesale development of cases in December. The epidemic begun some time during the first two weeks of October, was at its height through the latter part of November, and has gradually abated since, though it is to be expected that cases will occur at intervals during the coming winter.

REPORT OF INVESTIGATION AT BRIDGEPORT, DECEMBER 18, 1907.

BY DR. KNABE.

On December 18 I went to Bridgeport to determine how many children in the public school of this town were infected with diphtheria. The infection was probably brought there from Plainfield, which is only a distance of five miles away, and a number of people go almost daily back and forth between the two places.

Having previously made arrangements with the two physicians of Bridgeport, Drs. Jennings and Yoke, we went to the public school building immediately upon my arrival.

This school is usually attended by 60 pupils, but only 27 of them were present owing to the fear of infection, which prompted many parents to keep their children at home.

I explained to the children the reason of our visit, giving them such information about infectious diseases as was suited to their age, and distributed a number of pamphlets treating of diphtheria, which the State Board of Health supplies for that purpose. We then inoculated swabs from the throat of each child, to be examined at the State Laboratory. I left a sufficient number of pamphlets with Mr. Blessing, the superintendent of the school, and also some with the physicians for distribution among their patients.

After the work at the school was completed I visited several families with Drs. Yoke and Jennings, respectively, and inoculated swabs from several patients suffering from pharyngeal and tonsillar inflammation.

The total number of swabs obtained at Bridgeport was 37.

The physicians stated that there would be no public entertainments at Christmas time, and that they had asked the keepers of groceries and other places where people were in the habit of congregating to have their localities frequently disinfected and permit no loitering.

I was very much interested to hear from Dr. Jennings that he saw a peddler walking into a quarantined house where the card was in full view, in spite of the fact that he was told to keep away and attempts were made to close the door on him.

Of the 37 cultures from Bridgeport which I examined the next day, three contained diphtheria bacilli. They were duly reported and quarantined. The school was closed, it being so near Christmas, and will be thoroughly disinfected before it is opened again.

The conditions obtaining in Bridgeport have been the best of any encountered during my services as deputy state health officer, and no spread of infection is to be feared in that locality, as the people are willing to observe strict quarantine.

I desire to express my appreciation of the courteous assistance rendered by the superintendent of the Bridgeport public school, Mr. Blessing, his assistant, Miss Kirby, and Drs. Yoke and Jennings.

Respectfully,

HELENE KNABE, M. D.

Ordered, That the Secretary make a report at the next regular meeting concerning the employes of the Board, giving their names, when appointed, salaries, their separate duties, etc.

The rules passed in 1903 not being in harmony in many respects with the statistical law of 1907, a set of new rules in harmony with said law were presented by the Secretary. The same were considered, rule by rule, and so adopted and finally adopted as a whole. The rules so considered and so adopted are as follows, to wit:

RULES OF THE INDIANA STATE BOARD OF HEALTH.

Passed According to Chapter 152, Acts of 1907.

"They (State Board of Health) shall have power to pass rules governing the duties of all Health Boards and all health officers, governing the hygienic disposal, transportation and disinterment of the dead, and for the enforcement of this act, and any violation of said rules shall be punished by a fine of not less than five nor more than fifty dollars for each offense."

The Attorney-General says: "The rules established by the State Board of Health have the force of statutes, and a law authorizing their adoption is constitutional."

Blue v. Beach, 155 Ind. 121, 130;

Isenhour v. State, 157 Ind. 517, 521.

Passed by the Indiana State Board of Health January 10, 1908.

COUNTY BOARDS OF HEALTH.

RULE 1.—County Boards of Health are ex-officio boards, composed of Boards of County Commissioners, and all acts and transactions of said County Boards of Health shall be separate and distinct from the acts and transactions of Boards of County Commissioners. The members of County Boards of Health shall meet annually in the first week of December of each year, and organize

by electing one of their number chairman to serve for one year, who shall not be the chairman of the Boards of County Commissioners, and they shall elect secretaries to serve one year from January 1st next ensuing their election, and said secretaries shall be licensed physicians, able-bodied, of good moral character, temperate, not addicted to drugs, and if not informed in Hygiene and Sanitary Science, shall speedily inform themselves as required by the rules of the State Board. Secretaries shall be paid whatever appointing boards may determine.

County Boards of Health shall hold regular monthly meetings at the time of holding of the regular monthly meetings of the Boards of County Commissioners, and by adjournment and at other times as they may deem necessary, to consider the health affairs of their respective counties, and to take such action as may be required to promote the public health. They shall be duly called to order as County Boards of Health by their chairmen, and all acts and transactions shall be carefully recorded, in special County Boards of Health minute books, and said minute books shall be carefully kept by the secretaries of County Boards of Health. All records of County Boards of Health shall be kept at the county seats.

County Boards of Health are the conservators of the health of the people of their respective counties, and it is their duty to protect the public health by practically applying before the occurrence of sickness and epidemics, all reasonable methods of disease prevention. They shall remove causes of disease, when known, and take prompt action to prevent and suppress epidemics and the transmission of infection. They shall abate and remove nuisances dangerous to the public health and perform such other duties as may from time to time be required of them by the State Board of Health.

County Boards of Health shall make an annual estimate of health expenses, including an emergency and epidemic fund, and present the same, to their respective County Councils for action. All expenses incident to disease prevention work, which is done outside the corporations of cities and towns, shall be paid from the county health appropriation, and all record books, quarantine cards, printing, stationery and postage shall be paid from said appropriation.

SECRETARIES OF COUNTY BOARDS OF HEALTH.

RULE 2.—Secretaries of County Boards of Health shall be the executive officers of their respective boards, and shall have the title of County Health Officer. They shall become familiar with and enforce the health laws, the rules of the State Board of Health and the rules and orders of their respective boards. They shall collect the vital statistics of their counties,* keep accurate records of the same, keep the minutes of the transactions of their boards, hold careful supervision over the health of their respective counties with special attention to the suppression of epidemics and abatement of nuisances, and shall make regular monthly reports and recommendations to their respective boards. They shall, in June of each year, make a sanitary inspection of the courthouse, jail, county infirmary, orphans' home, and other county institutions; also visit all subordinate officers in cities and towns, and all deputies to confer and advise with them in regard to the public health. They shall make a report of all sanitary inspections and visits to their boards, together with any recommendations they may deem proper, and said reports shall, when accepted by their boards, be spread of record in the regular minute books, and a copy of said reports shall be sent to the State Board of Health for publication in its annual report.

County Health Officers shall make a *special monthly health report* to the State Board of Health by the seventh of each month for the month preceding, and said report may be the same which is made to their respective boards, and shall give the number of cases reported of typhoid fever, scarlet fever, smallpox, diphtheria and membranous croup; also information concerning epidemics, closing of schools, nuisances abolished, and indeed all obtainable sanitary news. They shall also make quarterly reports of marriages and infectious diseases on the blanks furnished by the State Board.

County Health Officers may appoint deputies in their counties, and they are advised to appoint and issue written commissions as deputies to all city and town health officers, for this will give said city and town officers jurisdiction in the neighborhood of their cities and towns for the benefit of said cities and towns, and they may be called upon at times to aid in county health work. Undertakers or druggists make competent deputies in unincorporated towns, who may issue burial permits and keep county officers in-

*See Vital Statistics Rules.

formed in health affairs of their respective neighborhoods. The pay of deputies will be whatever the County Boards of Health will allow.

County Health Officers shall make such reports to the State Board of Health as may be required by said board, and shall answer all letters of inquiry of said board. In case of failure of secretaries of County Boards of Health to fulfill the duties herein prescribed, then the pay of said secretaries shall be refused upon the initiative of their respective boards, or upon the order of the State Board of Health.

CITY BOARDS OF HEALTH.

RULE 3.—City Boards of Health, appointed as commanded in the special laws of 1905 and 1907, shall appoint as secretary one of their number, to serve until his successor is appointed, who shall be a physician of good standing, able-bodied, of good moral character, temperate, not addicted to drugs, and well informed in hygiene. City Boards of Health shall keep careful minutes of all their transactions and it shall be their duty to protect the public health by practically applying, before the occurrence of sickness and epidemics, all reasonable methods of prevention. They shall remove causes of disease, when known, and take prompt action to prevent and suppress epidemics and the transmission of infection. They shall abate and remove nuisances dangerous to the public health and from time to time prepare and present to their respective city council such ordinances pertaining to the public health as they may deem proper. All expenses incident to disease prevention work which is done within the corporations of cities shall be paid from the city treasuries, and all record books, quarantine cards, printing, stationery and postage shall be paid for from said treasuries.

SECRETARIES OF CITY BOARDS OF HEALTH.

RULE 4.—Secretaries of City Boards of Health shall have the title of City Health Officer, and shall be the executive officers of their respective boards. They shall become familiar with and enforce the health laws, all city health ordinances, and the rules of the State Board of Health and the rules and orders of their respective boards. They shall collect and record the vital statistics*.

*See Vital Statistics Rules.

of their cities, keep the minutes of the transactions of their boards, hold careful supervision over the health of their cities with special attention to the suppression of epidemics and abatement of nuisances, and shall make regular monthly reports and recommendations concerning the public health to their boards. They shall, in June of each year, make a sanitary inspection of their cities, including public buildings, public water supply, streets, alleys, yards, privies, etc., and shall make written reports of said inspections, copies of which shall be supplied to County Health Officers for them to include in their annual county health reports; and said reports of sanitary inspections, when accepted by the respective city boards, shall be spread of record in the regular minute books.

City Health Officers shall make a special monthly report to their county health officers by the 5th of each month for the month preceding, and said report may be the same which is made to their respective boards and shall give the number of cases and deaths reported from typhoid fever, scarlet fever, smallpox, diphtheria and membranous croup, also information concerning epidemics, closing of schools, nuisances abolished, and, indeed, all obtainable health news. City Health Officers shall make such reports to the State Board of Health as may be required by said board, and shall answer all letters of inquiry of said board. In case of failure of secretaries of city boards of health to fulfill the duties herein prescribed, then the pay of said secretaries shall be refused upon the initiative of their respective boards, or upon the order of the State board of Health.

TOWN BOARDS OF HEALTH.

RULE 5.—Town Boards of Health are ex-officio boards, composed of Town Boards of Trustees, and all acts and transactions of said boards of health shall be separate and distinct from the acts and transactions of Town Boards of Trustees. The members of Town Boards of Health shall meet annually in the first week of December and organize by electing one of their number chairman, who shall *not* be the chairman of the Town Board of Trustees, and they shall elect secretaries to serve one year from January 1st next ensuing their election, and said secretaries shall have the title of Town Health Officers. They shall be able-bodied, of good moral character, temperate, not addicted to drugs, and if not informed in hygiene and Sanitary science, shall speedily inform themselves as required in the rules of the State Board of Health. Secretaries

of Town Boards of Health shall be paid whatever appointing boards may determine. Town Boards of Health shall hold regular monthly meetings and by adjournment and at other times as they may deem necessary to consider the health affairs of their respective towns, and to take such action as may be required to promote the public health. They shall be duly called to order as Town Boards of Health by their chairman, and all acts and transactions shall be carefully recorded in special Town Board of Health minute books, and said minute books shall be carefully kept by the secretaries of the Town Boards of Health.

Town Boards of Health are the conservators of the health of the people of their respective towns, and it is their duty to protect the public health by practically applying, before the occurrence of sickness and epidemics, all reasonable methods of disease prevention. They shall remove causes of disease when known, and take prompt action to prevent and suppress epidemics and the transmission of infection. They shall abate and remove nuisances dangerous to the public health and perform such other duties as may from time to time be required of them by the State Board of Health. All expenses incident to disease prevention work which is done within the boundaries of towns shall be paid from the treasuries of the towns, and all record books, quarantine cards, printing, stationery and postage shall be paid for from said treasury.

SECRETARIES OF TOWN BOARDS OF HEALTH.

RULE 6.—Secretaries of Town Boards of Health shall have the title of Town Health Officer, and shall be the executive officer of their respective boards. They shall become familiar with and enforce the health laws, all town health ordinances, the rules of the State Board of Health and the rules and orders of their respective boards. They shall collect and record the vital statistics* of their towns, keep the minutes of the transactions of their boards, hold careful supervision over the health of their towns with special attention to the suppression of epidemics and abatement of nuisances, and shall make regular monthly reports and recommendations concerning the public health to their boards.

They shall, in June of each year, make a sanitary inspection of their towns, including public buildings, public water supplies, streets, alleys, yards, privies, etc., and shall make written reports of said inspections, copies of which shall be sent to the County

*See Vital Statistics Rules.

Health Officers for them to include in their annual county health report; and said reports of sanitary inspections, when accepted by the respective town boards, shall be spread of record in the regular minute books.

Town Health Officers shall make a special monthly report to their county health officers by the 5th of each month for the month preceding, and said report may be the same which is made to their respective town boards, and shall give the number of cases and deaths reported from typhoid fever, scarlet fever, smallpox, diphtheria and membranous croup, also information concerning epidemics, closing of schools, nuisances abolished, and, indeed, all obtainable sanitary news. Town Health Officers shall make such reports to the State Board of Health as may be required by said board, and shall answer all letters of inquiry of said board. In case of failure of Town Health Officers to fulfill the duties herein prescribed, then the pay of said officers shall be stopped upon the initiative of their respective boards, or upon the order of the State Board of Health.

VITAL STATISTICS.

RULE 7.—The registration areas shall be: County Area, which is the area outside of the corporation of cities and towns; and City Area and Town Area, which are, respectively, the areas within the corporation of cities and towns.

County Health Officers shall collect and record the vital statistics for their respective County Area, and City and Town Health Officers for their respective city and town areas.

DEATHS.

Blanks for death statistics supplied by the State Board of Health are: Death Certificates, Burial Permits, No Death Cards, Official Envelopes, Monthly Statement Cards.

Record books shall be purchased by local boards of health.

The physician in attendance at a death, or the householder, if no physician is in attendance, shall immediately make out a death certificate and personally deliver said death certificate or instruct that it be delivered, to any health officer or deputy, who, upon receipt of the same, provided said certificate is completely filled out, is written in ink or indelible pencil, and is otherwise acceptable, shall make out a burial permit, for which no fee shall be charged. Said burial permit is valid in all parts of the State. When no

physician is present at a death, and the householder can not be found, and it is not a coroner's case, the health officer shall make out the death certificate and sign it. All health officers shall immediately copy into their death record books all death certificates they receive which belong to their jurisdictions, and, carefully preserving said certificates, shall send them to the State Board of Health in the official envelopes, by the 4th of each month, for the month preceding, and there shall always be enclosed with the said certificates a monthly statement card, filled out according to the blanks on said card. In the event any health officer has no deaths to report for his jurisdiction, in any month, then he shall send to the State Board a "No Death Card," to show the matter of reporting has not been neglected. If a health officer receives a certificate of death which does not belong to his jurisdiction, he shall, after issuing a burial permit thereon, immediately send said certificate to the officer of the jurisdiction to which it does belong. When a death occurs outside the State, and the remains are brought into the State for interment, the burial permit shall be based upon the transportation permit, and no record of said death is required.

BIRTHS.

Blanks of birth statistics supplied by the State Board of Health are: Birth Certificates, Supplemental Report of Births, No Birth Cards, Official Envelopes.

Record books shall be purchased by local boards of health.

All births shall be reported within twenty days after occurrence upon official birth blanks, by the physician or midwife in attendance, if any, otherwise by the householder; all births for the county areas being directly reported to the County Health Officer, and all births for City and Town Areas to their respective officers. Health officers shall immediately record births in the birth record books, and by the 4th of each month all original birth certificates in the hands of health officers shall be sent to the State Board of Health. A child born dead at seven months gestation, or over, shall be reported and recorded both as a birth and a death, and a burial permit is required, as in the case of a regular death.

In the event the child born is illegitimate, the physician or midwife in attendance shall give for the name of the father such name as is supplied by the mother or her friends, but he shall not in any degree be responsible for the same.

SUPPLEMENTAL REPORT OF GIVEN OR CHRISTIAN NAME OF CHILD.

When any certificate of birth of a living child is presented without statement of the given or christian name, then the local health officer shall deliver to the mother or father a blank "Supplemental Report of Birth," for the report of the given or christian name of the child, which shall be filled out with the full name of the child, including the given or christian name and surname, as soon as said child shall be named, and said mother or father shall forthwith send or deliver the properly filled out blank to the health officer of the area in which the birth occurred. The original certificate of birth shall not be considered to be complete until such statement of given or christian name shall be filed or the blank returned with the statement, "died unnamed."

MARRIAGES.

Blanks for marriage statistics supplied by the State Board of Health are: Marriage returns, which are sent direct to county clerks from State Board; Quarterly Return Blanks, supplied only to county health officers by State Board.

Record books shall be purchased by local boards of health.

All ministers and other persons authorized to perform marriages, shall report on official blanks each marriage they may perform, to the clerk of the county, within five days after the marriage, and the said clerk shall report said marriages to the County Health Officer on or before the 5th day of each month for the month preceding, and the County Health Officer shall record each marriage in the official marriage record book. The County Health Officer shall also, each quarter, fill out the marriage blanks he receives from the State Board and then send said blanks to the State Board within ten days after the end of each quarter.

INFECTIOUS DISEASES.

Blanks for infectious disease statistics supplied by the State Board of Health are: Report of Infectious Disease Blanks, to all health officers; Quarterly Return Blanks sent to county health officers.

Record books shall be purchased by local boards of health.

All cases of infectious and contagious diseases which are listed in Rule 10, shall be immediately reported on the official blank to the health officer having jurisdiction by the physician, if any be in attendance, otherwise by the householder or attendant. The health officer receiving said report shall immediately enter the same in his infectious disease record book, and in person or by

deputy, establish quarantine, as directed in Rule 11. All city and town health officers shall preserve the original infectious disease certificates they may receive and send the same to the County Health Officer by the 2d of each month for the month preceding, and said county officer shall use the same for making up his special report, as commanded in Rule 6.

RECORD BOOKS, STATIONERY, QUARANTINE CARDS, ETC.

All necessary printing, such as letter heads, envelopes, circulars, quarantine cards, etc., shall be paid for by the county, city and town boards of health from their special health appropriations; and said boards of health shall also purchase, as needed, official record books, as follows: Death Records, Birth Records, Infectious Disease Records, and County Health Boards shall add Marriage Records; but City Boards of Health, in cities having less than 2,000 population, and all Town Boards of Health, shall purchase Combination Record Books, which contain separate divisions for recording births, deaths and infectious diseases.*

BURIAL.

Blank burial permits are supplied by the State Board of Health.

RULE 8.—Human remains, exceeding seven months gestation, shall not be buried without a permit issued by a health officer or deputy, and no permit shall be issued unless the health officer or deputy has in hand a certificate of death properly filled out in ink or indelible pencil. In all cases of death from cholera, bubonic plague, leprosy, typhus fever, yellow fever, smallpox, diphtheria, membranous croup and scarlet fever, the funeral shall be strictly private and the burial shall be made within twenty-four hours after death; and no public or church funeral shall be held or any person permitted to enter the house containing the remains, excepting the undertaker and his assistants, unless by permission of the health officer.

RULE 9.—Buried human remains shall not be disinterred or removed without permission from the State Board of Health, and blank applications for disinterment and removal may be had at any time, upon application to said State Board.

When, however, the disinterment and re-interment is to be made in the same cemetery, then no permit is required. Bodies which have lain over one week in a vault are to be regarded as

*Official record books may be purchased from any public printing house.

buried, and must not be removed or buried without a permit. If remains are deposited in a vault and subsequently removed for burial in the same cemetery, no permit is required.

QUARANTINE.

Quarantine cards shall be purchased by local boards of health, and shall be as ordered in Rule 11.

RULE 10.—The infectious and contagious diseases which shall be immediately reported to the health officer having jurisdiction and which shall be quarantined, are hereby declared to be: Yellow fever, smallpox, cholera, diphtheria, membranous croup, scarlet fever, measles, typhus fever, bubonic plague, leprosy, pulmonary consumption, typhoid fever, chickenpox and whooping-cough. Provided—Pulmonary consumption, typhoid fever, chickenpox and whooping-cough shall not be quarantined, as they are to be reported for record only.

RULE 11.—Health officers, upon learning in any way of the existence of any disease listed in Rule 10, within their respective areas, shall immediately, in person or by deputy, quarantine the infected house, rooms, or premises, so as to effectually isolate the case, or cases, and the family, if necessary, *in such manner and for such time as may be necessary to prevent transmission of the disease*; and whenever a quarantine is established a placard shall be posted in a conspicuous position, giving the name of the disease in letters not less than two inches long, and also having upon the card, the following notice:

"All persons are forbidden to enter or leave these premises without special permit from the health officer having jurisdiction, and all persons are forbidden to remove or mutilate this card, or to in any way interfere with the quarantine without orders from said health officer."

It shall be unlawful to violate a quarantine, either by entering or leaving the quarantine area, or to demolish or tear away the ropes or other marks whereby the boundaries of a quarantine are defined, and whoever tears down, obscures, destroys, mutilates or defaces a quarantine placard, or who violates a quarantine in any way whatsoever, except by permission or direction of the health officer having jurisdiction, shall suffer the penalty prescribed in Section 3 of Chapter 83 of the Acts of 1903, to wit: A fine of ten to fifty dollars, to which may be added imprisonment in the county jail not exceeding six months.

RULE 12.—When visiting patients known to be sick with small-pox, scarlet fever, or diphtheria, health officers and attending physicians shall take reasonable precautions against carrying infection.*

RULE 13.—It shall be unlawful for any person other than licensed physicians or nurses to enter or leave any house or building infected with any communicable disease, listed in Rule 10, without first procuring a permit from the health officer having jurisdiction, and obeying absolutely his directions as to all sanitary precautions which he orders.

RULE 14.—It shall be unlawful for any person who is, or has been recently affected with any communicable disease listed in Rule 10 (omitting pulmonary tuberculosis and typhoid fever) to travel in railway or trolley cars, or appear upon the public streets or highways, or to appear in any public place or gathering, or to travel

* Reasonable precaution would be to wear a clean linen duster, oil-cloth or rubber coat, and to wear a close-fitting cap made of silk, linen, oilcloth or rubber. The cap should well cover the hair. Before leaving the premises, physicians should cleanse hands and face with antiseptic soap and water and use a disinfectant upon hands and face. The coat, hat, antiseptic soap and bottle of disinfectant should be carried in a special glazed leather valise or other approved receptacle, together with a pad of cotton, which is to be kept wet with formaldehyde. Health officers and attending physicians should give full and explicit instructions to parents, nurses and attendants concerning every precaution to be taken against the spread of infectious diseases. When possible, patients should be placed in a room which, for the time, should not be entered by others than those who nurse, and only the physicians and nurses should be admitted. Every article of tableware or of apparel used by the patient should be sterilized or destroyed by fire as soon as possible. Pieces of old, soft cloth should be used for wiping the nose and mouth of the sick. They should be used but once and then immediately destroyed by burning, or sterilized by boiling one-half hour or more in water.

The disinfectant recommended is a 1 to 5,000 solution of corrosive sublimate, a 5 per cent. solution of carbolic acid, or a 1 per cent. solution of lysol. A cake of sublimated or carbolic soap may be conveniently carried in a traveler's soap box. The cotton pad is kept in the case or bag to absorb the formaldehyde. This chemical is our greatest antiseptic and its vapor will destroy all germs.

It is well to add to the above outfit, a roll of paper napkins and a bundle of small, flat pine sticks to be used as tongue depressors. The paper napkins are suggested because towels cannot sometimes be found at the houses of the poor, and if they were found, might be infected. Having one's napkins gives perfect independence. The wooden tongue depressors may be whittled out of pine, or better, obtain from seed dealers the flat pine markers for flower beds which gardeners use.

in any public vehicle or vessel, until a certificate is issued by the attending physician to the health officer within whose jurisdiction the case occurs, stating that all danger from infection or contagion by reason of such disease is passed, and such certificate is approved and endorsed by said health office.

RULE 15.—Whenever a health officer shall know or suspect or be informed of the existence of any communicable disease dangerous to the public health, and there be no licensed physician in attendance, or should said physician, while in attendance, fail or refuse to immediately report such case to the health officer, it shall be the duty of said health officer, or deputy, to examine such case or cases of alleged communicable disease dangerous to the public health, and act as required by the rules governing such cases of communicable diseases.

RULE 16.—In all cases where there has been an exposure or a suspected exposure to smallpox of any person or persons, it shall be the duty of the health officer under whose jurisdiction said person or persons may be temporarily or permanently residing to quarantine for fourteen days or keep under observation such person or persons as may be exposed or suspected of having been exposed to smallpox, and to advise vaccination or re-vaccination of all who may have been exposed. It shall be the imperative duty of the health officer to enforce this rule, and in case of refusal or neglect by said health officer to comply with the requirements of this rule, or other rules, it shall be the duty of the Secretary of the State Board of Health to assume charge, and either in person or by deputy, enforce the foregoing rules. All vaccinations shall be made with non-humanized virus, the only exception being that, during an epidemic of smallpox, should a sufficient quantity of bovine virus not be obtainable, humanized virus may then be used when sanctioned by the Board of Health under whose jurisdiction said epidemic may occur. If, in the judgment of the health officer, it is deemed safe for an exposed person to be at liberty after vaccination and after disinfection in body and apparel, the said exposed person shall be given a certificate of health and not be placed in quarantine. If the said exposed person changes his or her location, the health officer having jurisdiction shall inform the health officer at the new location.

DISINFECTION.

RULE 17.—The room, and if necessary the entire house, in which there has been a case of any contagious disease listed in Rule 10, shall be immediately disinfected following recovery of the sick or the removal of the remains, as follows, to wit:

All surfaces shall be thoroughly washed with a solution of corrosive sublimate of the strength of one part in 1,000 parts of water. The walls and ceiling, if plastered, shall be brushed over with this solution, after which they should be whitewashed with a lime wash. Especial care must be taken to wash away all dust from window ledges and other places where it may have settled, and to thoroughly cleanse crevices and out-of-the-way places. After this application of the disinfecting solution and an interval of twenty-four hours or longer for free ventilation, the floors and woodwork should be well scrubbed with soap and hot water, and this should be followed with a second more prolonged exposure to fresh air admitted through open doors and windows. Schoolbooks or books from a circulating library shall not be removed from any house during the prevalence of any contagious disease dangerous to the public health, and if such books have been in such house during the prevalence of said diseases, they shall be destroyed by the owner or library authorities or be properly disinfected before being returned to schools or put in circulation.

Formaldehyde disinfection may be substituted for the above method as follows:

Washable Articles: Into a tub or other receptacle of appropriate size, put enough water to cover the handkerchiefs, towels, napkins, sheets, blankets or other washable articles, and to each gallon of water used, add one fluid ounce (two tablespoonfuls) of 40 per cent formaldehyde solution. Stir the water and the formaldehyde together and then put in the articles. Let soak for not less than one hour, then laundry as usual.

Unwashable Articles: Quilts, comforts, pillows, mattresses, carpets, rugs, clothing, etc., if old and dirty should be burned, otherwise, they may be disinfected by placing them in a tight room or in a room that is itself to be disinfected, and then burning sulphur therein or filling the room with formaldehyde gas.

ROOM DISINFECTION.

I. Carefully close all windows and doors, except one door for exit. Paste paper over stovepipe holes, and put wetted, or, better,

paste paper strips over all windows, transom or door cracks. In a word, seal the room tightly with paper strips from the inside.

II. Open closet doors, drawers, trunks, boxes, etc. Suspend clothing and bedclothes upon lines stretched across the room, or spread out on a chair or clotheshorse. Books must be opened and the leaves spread; in short, the room and its contents must be so disposed as to secure free access of gas to all parts and all objects.

III. Make the air in the room damp; *this is absolutely necessary for disinfection*, either by sulphur or by formaldehyde. Dampness may be produced (a) by boiling water on a gas or gasoline stove; (b) by pouring boiling hot water from a tea kettle into a tub; (c) by pouring hot water onto bricks or stone, or by dropping hot bricks or stones into vessels containing water. Under no circumstances is efficient disinfection possible without in some way making the air of the room quite damp.

IV. Measure the room and multiply the length, breadth and height together. This will give the contents in cubic feet. Divide by 1,000, and this gives the number of thousand cubic feet in the room. This is called the unit space.

Disinfection by Formaldehyde: Measure the room, and for each 1,000 cubic feet use two pints of formaldehyde and thirteen ounces of commercial permanganate of potassium. Procedure: Place a large washbowl, crock, tin dishpan or galvanized iron pan or tub in the center of the room. Put in the required amount of permanganate of potassium and lastly pour in the required amount of formaldehyde. Permanganate must go in first. Retire immediately after pouring on the formaldehyde, for the formaldehyde gas is promptly released and is injurious if breathed in any quantity. Keep the room closed for at least three hours, then open, air thoroughly, and clean in the usual way.

Disinfection of Clothing or a Few Articles: Take an empty trunk, wooden box or wash-boiler. On the bottom lay an article, cover with an old towel or a piece of wash goods, and sprinkle thereon two tablespoonfuls of 40 per cent. formaldehyde solution. Then put in another article, say a pair of trousers or a dress skirt, cover as before, and again sprinkle two tablespoonfuls of formaldehyde. If there are enough articles the boiler or trunk may be filled in this way. Finally put on the cover to the boiler or close the trunk, and in ten hours open and hang out in the air and sunshine. If the smell of the formaldehyde persists, a little aqua ammonia sprinkled on the clothes will remove it.

Disinfection by Sulphur: Place a tub containing about two inches of water in the room. Put two bricks in the tub and on them place an iron or tin pan or a stone crock and in the pan or crock place three pounds of sulphur for every 1,000 cubic feet. Now fill the room with steam. When the room is full of steam, pour a spoonful of alcohol or coaloil onto the sulphur and set on fire. Immediately leave the room and close the door. The sulphur is burned to a gas and this gas, in the presence of steam, kills all infection. Sulphur gas without steam is worthless. Do not, on any account, leave out the steam. "Sulphur candles," purchasable at drug stores are all right, if enough are used, but they are more expensive than ordinary sulphur, and, of course, must have steam as ordinary sulphur.

A Standard Disinfectant: Dissolve chloride of lime of the best quality in pure water in the proportion of six ounces to the gallon. Keep in a stone jar or jug. Use one quart of this solution for each discharge from a patient suffering with any contagious or infectious disease. Mix well and leave the vessel for an hour or more before throwing in privy vault or water closet. The same for vomited matter. For a very copious discharge, especially in typhoid fever, use a larger quantity; and for solid or semi-solid matter, use the solution in double strength. Discharges from the mouth and throat should be received into a cup half full of the solution, and those from the nostrils upon soft cotton or linen rags, which should be immediately burned.

SCHOOLS.

RULE 18.—It shall be unlawful for school trustees or school boards to crowd children into schoolrooms in excess of one child to each 200 cubic feet of space, and it shall be the duty of the State Health Officer and of all health officers having jurisdiction, to dismiss forthwith any schoolroom in which 200 cubic feet of air space is not supplied to each pupil; and the school authorities shall without delay make provisions for pupils in accordance with the requirements herein set forth.

RULE 19.—It shall be unlawful for any teacher, school trustee, or health officer having jurisdiction, to permit attendance in any private, parochial or public school of any pupil affected with a severe cough, a severe cold, itch, lice or other vermin, or any contagious skin disease, or who is filthy in body or clothing or odorous therefrom, or who has any of the following dangerous, infectious

diseases, to wit: Diphtheria, smallpox, scarlet fever, whooping-cough, chickenpox, consumption. And the teachers in all schools shall, without delay, send home any pupil who is obviously sick, even if the ailment is unknown, and said teacher shall inform the local health officer as speedily as possible, and said health officer shall examine into the case and take such action as is reasonable and necessary for the benefit of the patients and to prevent the spread of infection.

RULE 20.—It shall be unlawful for any parent, guardian or other person having control of any child affected by any disease listed in Rule 19, to permit said child to attend any public, private or parochial school, or be present in any public place; and it shall be unlawful for any person having pulmonary consumption to be employed as a teacher or janitor in any public, private or parochial school.

RULE 21.—It shall be unlawful for any school teacher or other school officer to admit to any public, private or parochial school, whether as a pupil or otherwise, any person who has come from, or who resides in any house or building affected with any disease (excepting tuberculosis and typhoid fever) listed in Rule 19, or who has recently been affected with any such disease, unless such person shall first present a certificate signed by a licensed physician, stating that all danger of communicating such disease is passed, and said certificate has been approved and indorsed by the health officer in whose jurisdiction any such person may reside.

RULE 22.—All schoolhouses, before school opens in the autumn, shall be cleaned and disinfected. The cleaning shall consist in sweeping and scrubbing the floors, washing all woodwork, including wooden parts of seats and desks, and the disinfecting shall be done as in the rules, page 56.

Ventilation shall be carefully attended to in all schoolrooms, and when ventilating ducts do not exist, it shall be the duty of teachers to flood the schoolroom with fresh air by opening windows and doors at recess and at noon time. All schoolhouses shall be supplied with an abundance of pure drinking water. All school-house wells shall be supplied with troughs, and drains and under no conditions shall pools, sodden places or small or large mudholes be allowed to exist near the well.

Buckets and all open water receptacles are forbidden, for such furnish most excellent opportunities for transmitting disease germs

which occur in saliva. When water is not dispensed at the pump or from water faucets or sanitary drinking fountains, then covered water-coolers shall be used. The drinking vessels shall be of heavy smooth glass, stoneware or porcelain covered metal. Individual drinking glasses or cups are recommended.

Water closets and privies shall be separate for the sexes and kept clean and disinfected at all times. When outdoor privies exist, they shall be well separated for the sexes, they shall be screened, and shall have good walks leading to them.

RAILWAYS, STEAMBOATS AND ALL COMMON CARRIERS.

RULE 23.—It shall be unlawful for any common carrier or any person to knowingly bring into the State of Indiana any person sick or suspected of being sick, with Asiatic cholera, smallpox, yellow fever, typhus fever, diphtheria, membranous croup and scarlet fever, bubonic plague, leprosy, or other communicable disease dangerous to the public health.

RULE 24.—When any railway car, steamboat, vessels or conveyance, coming from a place or locality declared by the State Board of Health, having jurisdiction, as being infected with cholera, smallpox, typhus fever, bubonic plague, leprosy, yellow fever, scarlet fever, diphtheria, membranous croup, or having on board any person or persons affected with any of the above named diseases, enters any port or place in the State of Indiana, such railway car, steamboat, vessel or other conveyance and the crew, officers, passengers, baggage, merchandise, and freight shall be subject to such inspection, disinfection and control as may be ordered by the State Board of Health.

RULE 25.—If any person is found on any railway car, steamboat or other conveyance, who is sick, or reasonably supposed to be sick, with cholera, smallpox, typhus fever, bubonic plague, leprosy, yellow fever or scarlet fever, he or she shall be immediately removed by the health authorities within whose jurisdiction such person is found and isolated and properly cared for until the termination of the disease, and the necessary expense of such isolation and care (if the person so removed is unable to pay the same) shall be a valid claim against and be refunded by the owners, agents or assigns of the railway car, steamboat, vessel or other conveyance from which such person or persons were removed.

RULE 26.—In case of smallpox, all persons reasonably suspected of having been exposed thereto, shall be removed from such railway car, steamboat, vessel or other conveyance, and disinfected in person and apparel and held in quarantine until such time as the health officer having jurisdiction shall deem it safe to the public. In case of typhus fever, all persons reasonably suspected of having been exposed thereto, shall be removed and isolated for twenty-one (21) days from the last exposure. In case of cholera or bubonic plague, all persons reasonably suspected of having been exposed thereto, shall be removed and isolated for five (5) days from last exposure. The clothing of persons so removed and all baggage, luggage, freight or merchandise, found on any railway, steamboat, vessel or other conveyance, on which there is any person sick with cholera, smallpox, typhus fever, bubonic plague, scarlet fever or diphtheria, and reasonably suspected of having been infected, shall be at once disinfected or destroyed, and such railway car, steamboat, vessel or other conveyance shall also be disinfected, according to the rules governing disinfection.

RULE 27.—When deemed necessary by the State Board of Health, to prevent the spread of cholera, and after ten (10) days' notice, each and every railway car, steamboat, vessel in or coming into the State of Indiana, and used for the transportation of passengers, shall be provided with means satisfactory to said Board of Health for disinfecting the excreta of passengers and crew.

RULE 28.—It shall be the duty of the conductor of any railway or traction car, and the master of any steamboat or vessel, to immediately notify by telegram or telephone, the Secretary of the State Board of Health at Indianapolis, of any case or suspected case of cholera, smallpox, yellow fever, diphtheria, scarlet fever, bubonic plague, or typhus fever occurring on board such train or electric car, boat or vessel within the limits of the State of Indiana.

RULE 29.—It shall be the duty of the Board of Health of any town, city or county, to at once furnish the State Board of Health with a true copy of any quarantine orders or regulations, adopted by said Board of Health as against any foreign state or any municipality or township within the State of Indiana.

RULE 30.—Any person or persons, or any board of health, or health officer, or corporation violating, failing or refusing to comply with either or any of the foregoing rules, shall be subject to the

penalties provided in the health statutes, wherein those rules are authorized.

RULE 31.—In case any person feels aggrieved at any act or decision of a health officer, appeal may be made to the State Board of Health in session or to its secretary, but pending such appeal the act or decision of said health officer shall stand.

RULE 32.—Any person who violates any rules or regulations of the State Board of Health shall be prosecuted for such violation according to the law.

RULE 33.—All rules or parts of rules in conflict with these rules are hereby repealed.

**Rules of the Indiana State Board of Health Governing the Care
and Management of Dairies and Sale of Milk
in the State of Indiana.**

Passed January 10, 1908.

1. No building shall be used for stabling cows for dairy purposes which is not properly constructed, well lighted, ventilated and provided with a suitable solid floor of plank, cement or other impervious material that can be readily cleaned, and laid with proper grades and channels to carry off all drainage.

2. No water-closet, privy, cess pool, urinal, inhabited room or workshop shall be located within any building, shed or room for stabling cows for dairy purposes, or for the storage of milk or cream; nor shall any fowl, hog, horse, sheep, goat or other animal be kept in any room used for such purpose.

3. No space in buildings or sheds used for stabling cows shall be less than five hundred (500) cubic feet for each cow, and the stalls therefor shall not be less than four (4) feet in width.

4. All rooms and stables in which cows are kept for dairy purposes shall at all times be thoroughly clean and in good repair and shall be painted or whitewashed at least twice each year.

5. All manure shall be removed from the room or stable in which cows are kept for dairy purposes at least twice each day and shall not be stored where odors from the same will be noticeable at the stable.

6. Every person keeping cows for the production of milk for sale shall cause each cow to be cleaned and groomed each day and to be properly fed and watered.

7. Every person using any premises for keeping cows shall cause the yard in connection therewith, to be provided with a proper receptacle for drinking water for such cows, and none but fresh, clean, pure water shall be stored in such receptacle.

8. Any enclosure in which cows are kept shall be graded and drained so as to keep the surface reasonably dry and to prevent the accumulation of water therein, and no garbage, urine, fecal matter or similar substances shall be placed or allowed to remain in such enclosure, and no open drain shall be allowed to run through it.

9. Any person keeping cows for dairy purposes shall provide and use a sufficient number of pails, cans, or other receptacles, made of glass stoneware, glazed metal, or No. 1 tin for the reception of, storage and delivery of milk, and shall cause all milk as soon as drawn from the cows, to be removed from the room in which the cows are kept, to a separate milk room.

10. The milk room shall not be used as a living or sleeping room and shall be separate from the barn or stable in which cows are kept. It shall be supplied with pure water and suitable facilities for straining, cooling and storing milk, and washing and sterilizing all utensils and apparatus in which milk is received, stored and delivered.

11. All cans, measures, bottles and other receptacles of any sort used in the sale or handling of milk, shall be scalded with boiling water or live steam daily.

12. All milk shall be strained through wire cloth strainers and shall be cooled to 50 degrees Fahrenheit within thirty (30) minutes after it is drawn from the cow. Milk kept for sale, shall at all times register on test a temperature not higher than 50 degrees Fahrenheit, and shall be stored in a covered cooler, box or refrigerator.

13. All milk cans delivered to creameries or dealers in cities shall be covered with air-tight lids, and when conveyed in open wagons shall be covered with canvass while being so conveyed, and said canvass shall be clean by frequent washing.

14. Every person engaged in the production, storage, transportation, sale, delivery or distribution of milk, immediately on the occurrence of any case or cases of infectious disease, either in himself or his family, or amongst his employes or their immediate associates, or within the building or premises where milk is stored, sold, or distributed, shall notify the local health officer.

15. No person having an infectious disease, or having recently been in contact with a person having an infectious disease, shall milk or handle cows, measures or other vessels used for milk intended for sale until all danger of communicating such disease to other persons shall have passed.

16. No vessels which have been handled by persons suffering from such an infectious disease shall be used to hold or convey milk until they have been thoroughly sterilized.

17. No bottle, can or receptacle used for the reception or storage of milk shall be removed from a private house, apartment or tenement wherein a person has an infectious disease.

18. No person, by himself, or by his servant or agent or as the servant or agent of any other person, firm or corporation shall exchange or deliver within the State of Indiana any milk, skimmed milk or cream which contains more than 500,000 bacteria per cubic centimeter, or which has a temperature higher than fifty (50) degrees Fahrenheit.

SPECIAL MEETING.

MARCH 10, 1908.

Called to order at 2 p. m. by President Tucker.

Present: Drs. Tucker, Davis, McCoy, Wishard and Hurty.

The president stated the object of the meeting as follows: To consider the advisability of calling a conference of those interested to consider public water supplies and the prevention of the pollution of streams. Also, to consider schoolhouse sanitary surveys and to consider such other matters as might be brought before the board.

Mr. F. A. W. Davis, president of the Indianapolis Water Company; Mr. Dow Gwinn, president of the Terre Haute Water Company, and Mr. Howard Dill, president of the Richmond Water Company, were present upon invitation and were asked for their views and advice. After full discussion it was

Ordered, That the Secretary shall call, in the name of the State Board of Health, a "Conference of Municipal and Private Owned Water Plants of Indiana," with the State Board of Health. The object of said conference shall be to study the source of water supplies of Indiana, to study their preservation and purification, and to consider standard and uniform methods of analysis. Those invited to said conference shall be superintendents and other officers of all waterworks plants, in the State; committees of municipal councils of waterworks, and the members of the State Engineering Society. The time of the holding of said conference shall be June 24-25, 1908, and the Secretary shall make all necessary arrangements for holding said conference, including the preparation of a program.

Unanimously carried.

CONSIDERATION OF SANITARY SURVEYS OF SCHOOLHOUSES.

The Secretary presented petitions from patrons of, and sanitary surveys of, the following schoolhouses. It was ordered that the petitions be filed, but not made of record, and that the full text of the surveys be made of record, together with the action taken:

Inspection of schoolhouse at Otwell, Pike County, Indiana, May 24, 1907, by G. S. Coffin:

Site.—The school is located in the north part of the town. The plat contains about one acre of ground. It is low and level and is not well drained. The yard is partially sodded.

Approaches.—There are no walks leading to the building or to the out-houses.

Building.—The building is a two-story brick, containing four rooms. There is an old part containing two rooms and front halls, and an addition containing two rooms built from the old part, forming an L-shaped building. The building has a brick foundation and a shingle roof. The downspouts are partially gone and the walls watersoaked. The lower floors are not much above the ground surface.

Heating.—The rooms are heated by stoves which have jackets around them.

Ventilation.—There are no means of ventilation except by the windows.

Hallways.—There are two hallways each 8 by 23 feet. One is on the lower and one on the upper floor of the old building. Access to the various rooms is gained from these hallways.

Stairways.—A stairway three feet wide leads from the lower to the upper hall.

First Grade Room.—This room occupies the lower floor of the old building. It is 23 by 33 feet in area. It is lighted by four windows, each 3 by 7 feet. Three are in the south wall and one is in the north wall. The floor, walls and ceiling are clean and sanitary. There are twenty-one pupils in this room. The window space is about one-ninth of the floor space.

Fifth and Sixth Grade Room.—This room occupies the upper floor of the old building. It is an exact duplicate of the primary room just described. There are twenty-five pupils in this room.

Second, Third and Fourth Grade Room.—This room occupies the lower floor of the addition. Its area is 23 by 33 feet. It is lighted by six windows. Three are in the east wall and three are in the west wall. Each window is 3 by 7 feet. The floor, walls and ceiling are clean and sanitary. There are thirty pupils in this room.

Seventh, Eighth and High School Grade Room.—This room occupies the upper floor of the addition. It is a counterpart in every respect of the room just described. There are twenty-eight pupils in this room.

Remarks.—The trustee does not wish to build a new building. He thinks this one will do.

Recommendation.—It is respectfully recommended that the building be condemned unless suitable means of heating, ventilation and lighting are provided; also proper approaches and drainage and downspouts.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Otwell, Pike County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Otwell, Pike County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, trustees, teacher, or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of schoolhouse at New Augusta, Pike Township, Marion Count, Indiana:

Several letters and also a petition being received from patrons of the schoolhouse at New Augusta, that the State Board of Health make a sanitary survey of said schoolhouse and take such action as might be deemed proper, I accordingly visited New Augusta February 3. I was met at the schoolhouse by several patrons and by one member of the advisory board.

Site.—The site is satisfactory. It is a good large lot and well located. The soil is gravel, and if necessary, it can be drained.

House.—The house was built in 1885. It is of brick, with brick foundation, no basement or cellar, two stories, and contains four rooms. The downspouts are broken, the rainwater falls directly upon the ground and soaks into the walls. Under such conditions the walls in lower rooms must be damp when it rains. The entrance opens into a small room which might be called a hall, and on either side are doors leading to schoolrooms. The stairway rises from this entrance for a short distance and then spreads into two branches, one on each side. These branches are narrow, are boxed in, and like the main part of the stairway, they are very steep. Had the schoolhouse ever caught on fire, there certainly would have been a number of burned or crushed children in this steep and narrow stairway. From the upper hall doors open on either side to the respective rooms. The upper and lower halls which contain the stairway are unwarmed. The cloakrooms, through which it is necessary to pass to enter the schoolrooms, are unwarmed. The warming of the house is by Peck-Williamson heaters, which have always been found inadequate.

High School.—The high school is held in the two rooms in the upper part of the building. One is called the west room and the other the east room. They are of the same size, namely, 27x36x12 feet. They are well lighted, but the ceilings are low. The blackboards are ordinary black paint upon the walls, and not satisfactory. Enrollment, 59, average attendance 40. The temperature was just freezing on the outside and in the west high school room was 45, and in the east high school room was 50. The pupils in the west high school room had on their wraps, some were shivering, most of the boys had their hands in their pockets, bent over, trying to keep warm. In the east high school room the pupils were grouped around the hot-air pipe, which was supposed to bring hot air from the Peck-Williamson heater in the lower room. All were cold, some of them blue around the mouth and none were comfortable. I asked how many of them had warm feet, and only two of the forty present raised their hands. There is no means of ventilation except by windows and

doors. The walls were painted and in fair condition. The floors were old and much worn. Shades were at the windows, some of them torn and ragged.

Intermediate Room.—Enrollment 35, average attendance 33. Size, 27x36x14 feet. When I entered this room the pupils had on their cloaks and overcoats, and some of the boys with their collars turned up. Every one had shoulders stooped forward and the general drawn-up condition which a person takes when chilly. The room contained considerable smoke, for the heating apparatus was not working well. Ceilings to this room are sustained by two posts which have been recently put in. The temperature of this room was 58, satisfactorily lighted; ventilation by windows and doors.

Primary Room.—Enrollment 34, average attendance 28. Size 27x36x14 feet. Ventilation by windows and doors; well lighted. The temperature in this room was 57. The children wore their wraps and had the attitude of those who were cold and chilly.

Outhouses.—The outhouses were abominable, and paths leading to them were not as they should be.

Recommendations.—I recommend that this schoolhouse be absolutely condemned for school purposes, and that the condemnation take effect June 1. I also recommend that the board immediately issue an order that additional stoves be supplied to supply a proper temperature. This can easily be done and at small expense. It certainly is a moral as well as a sanitary wrong to force children into such an environment.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at New Augusta, Pike Township, Marion County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at New Augusta, Pike Township, Marion County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of school building at Wheatland, Knox County, Indiana, January 28, 1908, by J. L. Anderson:

Site.—The highest point in the town, overlooking the country for miles around.

Approach.—Gravel road, no fence. A five-foot board walk leads from the street to the front entrance.

Lot.—Contains about one acre of ground.

Well.—Driven, with good iron pump, but no platform or drain pipe, and water stands around the pump at all times.

Outbuildings.—A good coalhouse stands on back end of lot, and two water-closets stand just north of it. Both are well screened, in good con-

dition, and had been cleaned out last fall. The vaults are about four feet deep, lined with plank. The girls' closet is in fairly good condition as to cleanliness and odor, but the boys' closet was in bad condition in both respects. There are no walks except the one at the front entrance.

Buildings.—A two-story, six room and halls brick, with metal roof and open belfry, facing west. Built about twenty years. The downspouts are broken in several places and the roof leaks. There is no basement, and no stone or slate between the brick foundation and the building. Foundation about twenty inches above ground, with iron ventilators on all sides. All windows were covered with heavy wire screens to prevent breaking of glass from outside. Good cement platforms and steps are at the front and rear entrances. The walls in fair condition (built solid, with no inside air space), except the north wall of northwest room, which is cracked from the foundation to the top and bulges out at least one inch. There are cracks in the walls on the south and east sides extending from the lower to the upper windows, but they do not seem serious. Large double doors give entrance to a hall twelve feet wide extending through the building. At the east or rear end of this hall is a four-foot stairway with landing and right turn near the top. Double doors at the rear entrance give exit from the hall. The ceilings of the hall and lower rooms are about thirteen feet high. One room is on the south and two rooms on the north side of this hall, with a combined hall and cloakroom about five feet wide separating them.

Primary Room.—This is the northwest room on first floor, 24x30x13 feet. Walls calcimined, plastering cracked in many places, especially in the ceiling; where the walls and ceiling join it is broken loose all around. Three windows in west and two on north side of room 3x7 feet with roller blinds and wind-shields at bottom of window. Windows hung with weights and can be raised or lowered at will. Wainscoting from the floor to about three inches above bottom of window casing. Floor worn, but clean and oiled. Room heated by coal stove with sheet iron screen next to pupils, but at eight o'clock was too cold for comfort; also felt very damp, though the janitor reported that he started the fire at 7 o'clock a. m. Seats are old but in fair condition and height for the children, and are arranged so the light falls on their backs and left side.

Blackboards are made by painting the plastering with lamp black. Enrollment, 35; average attendance, 28. It was reported to me by several persons that the joists in the ceiling of this room, which supports the floor of the room above, occupied by the high school, were cut too short, and, as the north wall of this room is cracked and bulging outward. It seems to me that there is a dangerous condition existing here.

Third and Fourth Grades.—This is the northeast room, lower floor; 24x30x13 feet. The same conditions exist in this room as in the primary room, with the exception that the floor is in worse condition and the wall in the southeast corner is water-stained, showing where water had leaked through from the roof and room above into this room. Enrollment, 45; average attendance, 40.

Fifth and Sixth Grades.—On south side main hall. Cloakroom, 4 feet wide at west end, opening into hall and room. Room 26x32x13 feet. Same conditions apply in this room as in the others, except the plastering is in a worse condition. Enrollment, 35; average attendance, 28.

UPSTAIRS.

Hall.—Same width as below, about 12-foot ceiling, and a room 12x14, partitioned off the west end for a library. There are about 400 volumes in the library, but as there is no means of heating the room, it is only used as a storage for the books.

Seventh and Eighth Grades.—South room. Size, 26x32x12 feet. Cloak-room at east end of room. Partition has settled and the plastering is broken along top of partition wall. This room is papered instead of being calcimined, but the paper is torn and loose in many places. Plastering in very bad condition and broken away where walls and ceiling join. Floor in bad condition and must be refloored if used another year. Condition as to light, heat and seating same as in the other rooms. Enrollment, 40; average attendance, 35.

High School.—Across hall in west room. Conditions same as in south room. Enrollment, 50; average attendance, 44. The east room upstairs is used as a recitation room. The ceiling and plastering in this room is the worst of all, a part of it having fallen off, and in the corner over the door the wall is water-stained. Mr. Pickel, the superintendent, stated that whenever it rained he had to put buckets in that corner to catch the water or it would flood the room below. There is no means of ventilation except by the windows and doors, and when we entered the high school room the air was very foul, although the school had not been in session over twenty minutes.

The rooms were cold and damp, and the stoves did not seem to heat them to any degree of comfort, and the children on the side of the room away from the stove were uncomfortably cold. Three outside schools were ordered abandoned and the pupils sent to this building, but it has not been done on account of lack of room.

The school term for this township is eight and one-half months, and no extra levy was made this year. The township is practically out of debt, has a total tax levy of only \$1.94 (one and 94-100 dollars) on the hundred dollars, and is able to build.

The building is unsanitary, too small to accommodate the pupils now attending school, cannot be remodeled or added to economically, and is believed to be dangerous. I would respectfully recommend its condemnation.

I met and talked with the following gentlemen:

Dr. J. L. Robinson, department health officer and on township advisory board.

Prof. Frank G. Pickel, principal of school.

Mr. A. C. Nickolone, merchant.

Chas. Nickolone, postmaster.

W. P. Lett, merchant.

J. M. Bunting, liveryman.

All of them expressed themselves in favor of a new building, and said that the township could very easily build one.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Wheatland, Knox County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Wheatland, Knox County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they will be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Stilesville, Franklin Township, Hendricks County, Indiana, June 14, 1907, by G. S. Coffin. E. R. Robards, Trustee:

Site.—The school is located in the central part of the town. The plat contains four town lots. It is well drained. The yard is of grass and dirt. There is a driven well upon the premises. A number of trees afford abundant shade.

Approaches.—Brick walks lead from the gravel road to the building. There are no walks to the outhouses.

Outhouses.—The outhouses are old, worn and in filthy and unsanitary condition. They afford no privacy for individual pupils.

Building.—The building is a two-story brick containing four rooms and two hallways. It has a stone foundation and a slate roof. The south wall has many missing bricks. The keystone over the entrance in the east wall is loose and the wall is badly cracked. The north wall is intact. The west wall is cracked from top to bottom in two places. The condition of the walls renders the building dangerous and unsafe for occupancy. The downspouts are partly gone and the walls are watersoaked. The ceilings and walls of the various parts of the building are cracked, filthy and unsanitary. The rooms are badly smoked. The floors are rough and dirty.

Heating.—The various rooms are heated by large stoves.

Ventilation.—There are no means of ventilation except by the windows and doors.

Hallways.—There is an entrance hallway on each of the floors. These halls are each 11 by 22 feet. They are used as cloakrooms. A winding stairway four feet wide leads from the lower to the upper hall. It is located in the north end of the halls.

Primary room.—This room is located in the south end of the building, on the lower floor. It is 24 by 26 feet in area. It is lighted by only two windows, each 3.6 by 7 feet. One is in the east wall and one is in the west wall. The lighting space is only one-fifteenth of the floor space, where it should be at least one-sixth. There are 25 pupils in this room, comprising the first, second and third grades.

Intermediate Room.—This room is located in the north end of the building on the lower floor. It is a duplicate of the primary room in every respect. There are 15 pupils in this room comprising the fourth, fifth and sixth grades.

Seventh and Eighth Grades Room. This room is located on the upper floor, in the north end of the building. It is 26 by 34 feet in area. It is lighted by four windows each 3 by 7 feet. Three are in the west wall and

one is in the east wall. The lighting space is about one-tenth of the floor space. There are 45 pupils in this room.

High School Room.—This room is located on the upper floor, just south of the seventh and eighth grades room, and is separated from it by a wooden partition. It is 14 by 26 feet in area. It is lighted by two windows, each 3 by 7 feet. One is in the west and one is in the east wall. The window space is about one-ninth of the floor space.

Remarks.—The building is in danger of collapse, is dirty, unsanitary and unfit for school purposes. The trustee, Mr. E. R. Robards, was talked with concerning the condition of the building. He requested that no other parties be talked with concerning the matter. His request was complied with.

Recommendations.—It is respectfully and strongly recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Stilesville, Hendricks County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the said schoolhouse at Stilesville, Hendricks County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Marco, Greene County, Indiana, May 23, 1907, by G. S. Coffin. J. R. Garrett, Township Trustee, Sandborn, Ind., R. R. No. 4.

Site.—The school is located in the west part of the town on a high, well-drained plat of ground. The plat contains one acre. The yard is of gravel and sod, and contains sufficient shade trees.

Approaches.—A gravel sidewalk leads to the building.

Building.—The building is a two-story brick containing three rooms and two hallways. It has a brick foundation and a shingle roof. The downspouts are gone and the walls are watersoaked, showing dampness inside and out. The walls are stayed by iron and steel rods. The walls are badly cracked and are in a dangerous condition. The building is twenty-seven years old.

Heating.—The rooms are heated by stoves.

Ventilation.—There are no means of ventilation except by means of the windows.

Hallways.—There are two halls at the front of the building, an upper and a lower. The area of each is 11 by 25 feet.

Stairway.—A stairway five feet wide leads from the lower to the upper hall.

First, Second and Third Grade Room.—This room occupies the lower floor of the building. Its area is 25 by 38 feet. It is lighted by six windows, each 3 by 7 feet. Two are in each the west, east and south walls respectively. Two pillars run from the floor to the ceiling, acting as supports. The floors, walls and ceilings are damp and unsanitary. This room contains 50 pupils.

Fourth, Fifth and Sixth Grade Room.—This room occupies the east half of the upper floor. Its area is 25 by 19 feet. It is separated from the other room of the upper floor by a board partition. It is lighted by three windows each 3 by 7 feet. Two are in the east wall and one is in the south wall. An iron support runs from the floor to the ceiling. The floor, walls and ceiling are rough and unsanitary. There are 30 pupils in this room.

Seventh, Eighth and High School Grade Room.—This room occupies the west half of the upper floor. Its area is 25 by 19 feet. It is lighted by three windows each 3 by 7 feet. Two are in the west wall and one in the south wall. An iron support runs from the floor to the ceiling. There are 60 pupils in this room.

Remarks.—The building is old, overcrowded, unsanitary and dangerous.

Recommendation.—It is respectfully recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Marco, Greene County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the said schoolhouse at Marco, Greene County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee or trustees, any teacher or any person uses said school house for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Putnamville, Putnam County, Indiana, June 4, 1907, by G. S. Coffin:

Site.—The school is located in the central part of the town, on a high, well-drained plat containing one acre of land. The yard is well sodded.

Approaches.—Cobble stone walks lead from the gravel road to the building. There are no walks to the outhouses.

Outhouses.—The outhouses are old, worn and filthy, and afford no privacy.

Building.—The building is a one-story frame containing two rooms and an entrance hall. The building is about forty years old. It is in bad condition. The weatherboarding is cracked and gone in many places. The roof is in a bad state of repair. The floors are not raised much above the ground surface.

Hallway.—The entrance hall and cloak room is 15 by 14 feet in area and is lighted by two windows each 3 by 7 feet. One is in the north and one in the south wall.

Intermediate Room.—This room is 24 by 24 feet in area. It is in the south part of the building. It is lighted by five windows, each 3 by 7 feet. Two windows are in the west wall and three are in the east wall. The walls and ceiling are dirty and unsanitary. The room is heated by a large stove in the center of the room. There is no way of ventilating the room except by the door and windows. This room is occupied by 34 pupils, comprising the fifth, sixth and seventh grades.

Eighth Grade and High School Room.—This room is situated in the north end of the building. It is like the one just described in every respect. There are 31 pupils in this room.

Primary Grades.—School for the first, second, third and fourth grades is held in a room on the lower floor of a dwelling house. This place is rented during school months.

Remarks.—The citizens and patrons who were interviewed recognize the poor school facilities and are anxious to have the condition remedied. The trustee desires to build a new and modern building.

Recommendation.—It is respectfully recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Putnamville, Putnam County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the said schoolhouse at Putnamville, Putnam County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Scipio, Jennings County, Indiana, May 28, 1907, by G. S. Coffin:

Site.—The building is located west of the town on a hill. The plat contains about one acre of land. The yard is well sodded and is well drained. There is no water supply on the ground.

Approaches.—Cobble stone walks lead to the building. There are no walks to the outhouses.

Outhouses.—The outhouses are worn, old and filthy, and afford no privacy for the individual pupil.

Building.—The building is a two-story brick containing four rooms. It has a shingle roof and a stone foundation. The walls are cracked in many places from the roof on down through the foundation. The north wall is bulged and is held in place by four large poles propped against it. All the walls are stayed by large rods running through the building to

opposite walls, and visible in the rooms and halls. There is no question about this building being in danger of collapse at any time.

Heating.—The rooms are heated by stoves.

Ventilation.—There are no means of ventilation except by the windows and doors.

Hallways.—There is an upper and a lower hall running through the center of the building from east to west. Each of these halls is 8 feet wide and 28 feet long.

Stairways.—A straight stairway 4 feet wide leads from the lower to the upper hall.

Primary Room.—This room is located on the lower floor of the south end of the building. It is 24 by 28 feet in area. It is lighted by six windows, each 3 by 8 feet. Two are in each the east, west and south walls respectively. The floor, walls and ceiling are rough, dirty and cracked in many places. A large wooden pillar in the center of the room runs from the floor to the ceiling. Twenty-five pupils are enrolled in this room.

High School Room.—This room is located on the upper floor just above the primary room, and is a duplicate of it in every respect. Seventeen pupils are enrolled in this room.

Intermediate Room.—This room is located on the lower floor of the north end of the building. It is 24 by 28 feet in area. It is lighted by six windows, each 3 by 8 feet. Two are in each the east, north and west walls respectively. In all other respects it is like the primary room which has been described. Thirty-five pupils are enrolled.

Grammar Grade Room.—This room is located just above the one just described and is like it in every respect. Thirty pupils are enrolled.

Recommendation.—It is respectfully and strongly recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Scipio, Jennings County, Indiana, is unsanitary and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Scipio, Jennings County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted, as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Lewis, Vigo County, Indiana, May 22, 1907, by G. S. Coffin:

Site.—The school is located in the west part of the town. The plat contains about one-half of an acre. The yard is partially sodded. The water supply is from a dug well.

Approaches.—The approach is by a board walk leading from the gravel sidewalk of the street. There are no walks to the outhouses.

Outhouses.—The outhouses are dirty and afford no privacy.

Building.—The building is a two-story frame, containing a lower and an upper room and a lower and upper front hall. The building has a shingle roof, which is in bad condition. The foundation consists of stones set about five feet apart.

Heating.—The rooms are heated by stoves placed near the center of each room.

Ventilation.—There are no means of ventilation except by the windows and doors.

Hallways.—There is an upper and a lower hall at the front of the building. Each is 12 by 30 feet in area.

Stairways.—A stairway 4 feet wide leads from the lower to the upper hall.

Lower Room.—The lower room is 30 by 38 feet. It is lighted by six windows, each 8 by 7 feet. Three are in the north wall and three in the south wall. The lighting space is about one-ninth of the floor space. The floors, walls and ceilings are in bad condition, being rough, dirty and unsanitary. A large chimney runs up through the center of the room. Three large pillars 6 by 6 inches run from the floor to the ceiling as supports. This room is occupied by 55 pupils, comprising the first four grades of the school.

Upper Room.—The upper room is a duplicate of the lower room in every respect. It is occupied by the four upper grades of the school. There are 50 pupils in this room.

Remarks.—This building is old, unsanitary, weak and dangerous.

Recommendation.—It is respectfully recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Lewis, Vigo County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Lewis, Vigo County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, trustees, teacher, or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of schoolhouse, District No. 4, Patoka Township, Crawford County, Indiana, May 25, 1907, by G. S. Coffin:

Site.—This school is located on a high hill in the country, some five or six miles from Taswell, Indiana. The plat is about one-half of a town lot in area and is at the edge of the hill.

Approaches.—There are no approaches.

Outhouses.—There is but one outhouse on the premises. It is worn, dirty and filthy, and affords no privacy. It is located within twenty feet of the schoolhouse and within forty feet of the dug well.

Building.—The building is a one-story frame, containing one room. It has a shingle roof and its foundation consists of six or eight stones, which hold the building some two or three feet off of the ground. It is only 20 by 30 feet in area. The weatherboarding is curved and cracked. The walls are not plumb.

The floors, walls and ceiling are built of rough lumber and are filthy and unsanitary. The lower two or three feet of the walls is decorated or painted with tobacco juice. The room is heated by a stove in the center of the room, set upon a large stone slab. The room is lighted by six windows, each 3 by 7 feet. Three are in the north and three are in the south wall. The floor is shaky and dangerous. The building would be in great danger of collapse in case of a strong wind. Fifty or sixty pupils attend school here. Double desks are in use.

Remarks.—The trustee does not wish to build a new house for the following reasons: He says he is going to build a house in another part of the township at a cost of \$400. He says there are four or five other buildings in the township that are older and in worse shape than this one. He says that he has made no levy for building, not having expected to build at this place. He says the township is out of debt, and he does not wish to run it in debt. The patrons state that there has been much sickness among the pupils and various teachers.

Recommendation.—It is respectfully recommended that the building be condemned, although it is hard to see that much good will come of it when only \$400 are spent to build new school buildings.

Note.—Church is held in this building, and it is said money is raised for foreign missionary work.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse in District No. 4, Patoka Township, Crawford County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse, District No. 4, Patoka Township, Crawford County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Pymont, Clay Township, Carroll County, Indiana. July 17, 1907, by G. S. Coffin. Wm. Campbell, Trustee.

Site.—The school is located in the central part of the town. The plat contains about one acre and is well drained. The yard is sodded. There is no water supply at the building.

Approaches.—There are no walks leading to the building or to the outhouses.

Outhouses.—The outhouses are old, worn and filthy.

Building.—The building is a one-story brick, containing two rooms. The walls are cracked in various places and the cracks have been filled with plaster.

Heating.—The building is heated by a stove in each of the rooms.

Ventilation.—There are no means of ventilation except by the windows and doors.

Front Room.—The front room is 22 by 34 feet in area. It is lighted by six windows each 3 by 7 feet. Three are in the east and three are in the west wall. The floor, ceiling and walls are dirty and unsanitary. This room is occupied by the first and second grades. There are 36 pupils in the room. The ceiling is only 10 feet high.

Rear Room.—The rear room is 24 by 34 feet in area. The ceiling is 10 feet in height. The room is lighted by eight windows each 3 by 7 feet. Two are in the east wall, two are in the west wall and four in the south wall. The walls, floor and ceiling are rough, dirty and in an unsanitary condition. This is occupied by the third to eighth grades. There are 50 pupils in the room.

Remarks.—A number of citizens talked with see the need of and desire a modern, sanitary building. The trustee was telephoned concerning the inspection, but did not appear.

Recommendation.—It is respectfully recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Pymont, Clay Township, Carroll County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Pymont, Clay Township, Carroll County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Douglass, Pipe Creek Township, No. 2, Madison County, Indiana, July 18, 1907, by G. R. Coffin. Oliver Stoker, Trustee. Elwood. Ind.

Site.—The school is located two miles east of Elwood, Ind. The plat contains about two acres of ground. It is well drained and well sodded. The water supply is from a dug well upon the premises.

Approaches.—A board walk leads from the road to the building.

Building.—The building is a one-story brick, having a slate roof. It contains one room and an entrance hall. The entrance hall is 11 by 21 feet, and contains two cloakrooms, each 11 by 7 feet.

School Room.—The school room is 23 by 31 feet in area. It is lighted by seven windows, each 3 by 7 feet. Three are in the north wall and two

in each the east and south walls. The room is heated by a large stove in the center of the room. The walls, floor and ceiling are rough, cracked, dirty and unsanitary. Seventy-three pupils attend school in this one small room.

Remarks.—The trustee does not wish to build a new building, claiming the township has an indebtedness of \$30,000. Patrons who appeared stated that they had been trying to get a new building for several years, and that many more than 73 pupils are in the school district, and would attend school if school facilities were afforded.

Recommendations.—It is respectfully recommended that the building be condemned.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Douglass, Pipe Creek Township No. 2, Madison County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Douglass, Pipe Creek Township No. 2, Madison County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Jasper, Dubois County, Indiana, May 24, 1907, by G. R. Coffin:

Site.—The school is situated in the central part of the town on a high, well-drained plat of ground. The plat contains about one acre. The ground is sodded and graveled. The water supply is from a dug well.

Approaches.—Wide cement walks lead to the building.

Building.—The building is a two-story brick one, containing four rooms and halls and cloakrooms. It has a stone foundation, and the lower floor is about five feet above the ground surface. The building consists of an original building and an addition built off as a wing from the front part of the original building.

The building is in first-class condition. It is strong and safe. Its floors, walls and ceilings are in good condition and are sanitary.

Ventilation.—The original building has no means of ventilation except by the windows. The addition has built in it large foul air flues.

Hallways.—In the original building at the front are a lower and an upper hall. Each is 22 by 24 feet in area. A stairway 3 feet wide leads from the lower to the upper hall. In addition where it joins the original building are a lower and an upper hall, each 16 by 24 feet in area. A stairway 4½ feet wide leads from the lower to the upper hall. Located on the floor of these halls are various cloakrooms.

First and Second Grade Room.—This room is located on the lower floor of the addition. It is 24 by 36 feet in area. It is lighted by eight

windows, each 3 by 8 feet. Three are in the south wall, three in the north wall and two in the west wall. Thirty pupils are enrolled.

Sixth, Seventh and Eighth Grade Room.—This room is just above the one just described, and is an exact duplicate of it. Twenty-six pupils are enrolled.

Third, Fourth and Fifth Grade Room.—This room is located on the lower floor of the original building. It is 24 by 42 feet in area. It is lighted by nine windows, each 3 by 8 feet. Four are in the east wall, three in the west wall and two in the north wall. There are 40 pupils enrolled.

High School Room.—This room is located just above the one just described and is like it in every way. Thirty pupils are enrolled.

Remarks.—The school board are taking steps toward having this building remodeled, so as to provide for proper lighting, heating and ventilation and the addition of two more rooms. They are willing to act upon any suggestion of your honorable body.

Recommendation.—It is respectfully recommended that, if the plans of the school board meet your approval and are executed, the building be not condemned.

Upon consideration, the above survey was ordered spread of record.

The Secretary read a letter from the authorities of the Jamestown Exposition, announcing a gold medal and a diploma had been awarded the exhibit of the Indiana State Board of Health at the Exposition. The letter announced the medal could be purchased by the board from Tiffany & Co., New York, but the diploma would be furnished free upon application. It was ordered that the diploma be accepted and that the Secretary so inform the Exposition authorities.

Ordered, That the Secretary call the Annual Conference of Health Officers to meet May 14th, to prepare a program and to make all arrangements.

SECOND REGULAR QUARTERLY MEETING OF THE INDIANA STATE BOARD OF HEALTH.

APRIL 10, 1908.

Affairs considered of the first calendar quarter and of the second fiscal quarter, both ending March 31, 1908.

Called to order by President Tucker.

Present, Drs. Tucker, Davis, McCoy, Wishard, Hurty.

Minutes of the last regular meeting, held January 10, 1908, read and approved.

Secretary's report read and received and ordered spread of record.

REPORT OF SECRETARY FOR CALENDAR QUARTER, ENDING MARCH 31, 1908.

According to the law, the regular collection of Records of Births began January 1, 1908. What might be termed "practice work" was commenced October 1, 1907, for during this period the health officers were being instructed and the machinery put into operation. Birth collections for the quarter have been quite satisfactory, although it is plain that all births are not yet reported. The birth rate for January was 19.5 per 1,000, which probably was very nearly correct for that month, although the annual rate is certainly much higher. We find the twenty-day clause in the law to be a very great obstruction in the collecting of records of births. The law should require the immediate reporting, and not allow twenty days. There are no reasons why a birth should not be reported without delay. Another complication appears in the matter of securing the names of newborn infants. Parents are not always ready to name their children, and this necessitates a supplemental report and further correspondence. As physicians are not paid for reporting births, they are not, as a rule, deeply interested in the work, and for the Health Department to require from them supplemental reports where the child is not named, introduces complications and delays which make the accurate collection of birth returns very difficult. The Secretary would recommend, therefore,

that health officers should, as far as possible, send out supplemental reports and secure the return of the same. As before reported, we have tried the experiment in the central office of doing this and have met with very excellent success. In communicating with the mothers, a letter is always forwarded in which the situation is explained, and with rare exceptions the mother appreciates the attention and promptly replies. A few letters, approving the method, have been received from mothers who recognize the very great importance of making legal records of the births of their children.

The following tables show the smallpox and typhoid fever status for the quarter:

SMALLPOX COMPARISON FOR FIRST QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
January, 1907	232	3	15
January, 1908	240	0	32
February, 1907	241	1	25
February, 1908	122	1	35
March, 1907	221	0	20
March, 1908	284	2	35
Total, 1907	694	4	60
Total, 1908	546	3	102

TYPHOID FEVER COMPARISON FOR FIRST QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
January, 1907	628	65	50
January, 1908	256	51	42
February, 1907	312	46	45
March, 1907	304	40	33
March, 1908	145	45	40
Total, 1907	1,302	151	128
Total, 1908	593	143	115

Nineteen visits were made by the Secretary during the quarter as follows:

January 4, Lebanon, account of address to Boone County Farmers' Institute.

January 8, Gas City, account of smallpox.

January 14, Scottsburg, account of meeting of Scott County Medical Society, and reading of a paper entitled, "Improvements in the Production of Antitoxin," and also on account of popular lecture upon "The Prevention and Cure of Tuberculosis."

January 20, Lafayette, account of lecture to convocation of students. Said lecture concerned the work of the State Board of Health.

January 22, Jamestown, account of sanitary inspection of schoolhouse.

January 29, Anderson, Alexandria and Richmond. Anderson to inspect the jail and meet with the County Commissioners. Alexandria, to consider the smallpox situation with the mayor and health authorities. Richmond, to lecture before the convocation of students at Earlham College upon the work of the State Board of Health.

February 3, New Augusta, account of inspection of schoolhouse.

February 4, Terre Haute, account of lecture before convocation of students in the Indiana State Normal School.

February 9, Edinburgh, account of address concerning the work of the State Board of Health, before the men's regular Sunday meeting in the Methodist church.

February 19, Terre Haute, to attend public meeting of the council, the school board and health authorities, to consider the matter of medical inspection of school children.

February 21, Shirley, to advise with local health authorities and to lecture in the evening upon the public work of the State Board of Health before a popular audience.

February 22, Fountaintown, account of smallpox.

February 25, Rockville, to confer with local authorities in regard to health affairs and to deliver a popular lecture in the evening upon "The Prevention and Cure of Tuberculosis."

March 3, Elkhart, to confer with local authorities in regard to health matters and to deliver a popular lecture upon "The Prevention and Cure of Tuberculosis."

March 10, Lebanon, to lecture upon the work of the State Board of Health before the Woman's Auxiliary of the Boone County Farmers' Institute.

March 13, French Lick, to address the Farmers' Institute, to deliver a popular lecture upon "The Prevention and Cure of Tuberculosis," to address men's big meeting in the afternoon in the Methodist church, upon social hygiene, and to lecture upon the work of the State Board of Health before a popular meeting in the Methodist church at West Baden.

March 16, Ft. Wayne, to confer with health authorities in regard to health matters, especially sanitation, and to deliver a popu-

lar lecture in the evening before the Electro-Technique Club upon "The Prevention and Cure of Tuberculosis."

March 23, Francisville, account of scarlet fever.

March 31, Marion, to confer with local health authorities, to address the trustees of the county upon school sanitation, and to make popular address upon "The Prevention and Cure of Tuberculosis."

Detailed accounts of these visits are herewith presented:

January 4, Lebanon: This visit was to address the Boone County Farmers' Institute upon the work of the State Board of Health. A large audience was present in the lecture room of the Methodist church. The lecture was most kindly received, numerous questions were asked and answered and a vote of thanks and confidence in the State Board of Health was extended.

January 8, Gas City: On account of a telephone message from mayor and city health officer, I visited Gas City to see the cases of smallpox which were reported as existing, and which some physicians denied as being smallpox. Five families were visited, and in every instance the disease was smallpox, although in mild form. Quarantine was already established and being properly maintained. It had not been found necessary to establish a pesthouse. The authorities were advised to purchase vaccine and offer free vaccination and to notify the people that vaccination was the only prophylaxis for smallpox.

January 14, Scottsburg: On invitation of the Scott County Medical Society I visited Scottsburg to read a paper before the society, and in the evening, under its auspices, to address a popular audience upon the subject of "The Prevention and Cure of Tuberculosis." The traveling tuberculosis exhibit was mounted in the lecture room of the Methodist church, and almost 300 people visited it in the afternoon. Twelve members of the Scott County Medical Society were present at the meeting of the society. My paper upon "Improvements in the Production of Antitoxin" was illustrated with samples and was well received. In the evening the lecture was attended by a very large audience, which filled the church to overflowing, and I was told many were turned away. A resolution of thanks to the State Board of Health for its work was passed.

January 20, Lafayette: Upon invitation of President Stone, of Purdue University. I visited Lafayette January 20, to lecture to "The Convocation of Students" upon the work of the State Board of Health. It certainly is of the greatest advantage to have

opportunity to present to students the facts concerning preventative medicines and their practical application through boards of health. Fully 1,000 students were present to hear the lecture, and I was gratified that applause was freely given for the work that is being done as related in the lecture.

January 22. Jamestown: This visit was on account of invitation of the trustee of the advisory board of Jackson Township, Boone County, to confer with them in regard to the schoolhouse. The authorities of this township desire to improve their schoolhouse, but it was not desired to build a new one, nor did it seem necessary. After a study of the building and of the whole situation, a series of recommendations were made which were duly adopted and the improvements will be made.

January 29. Anderson, Alexandria and Richmond: On account of invitation from the County Health Officer, Dr. Conrad, and the County Board of Health, I visited Anderson to inspect with them the jail and to confer upon health matters generally. The jail was found to be old, and very unsanitary. The commissioners will build a new one and officially declare they have been helped in this improvement materially by the service rendered by the Secretary. Leaving Anderson, I visited Alexandria on account of smallpox.

Alexandria: On account of several telephone messages from the mayor, health officer and citizens of Alexandria, I visited the place to render what help I could. Upon arrival, Health Officer Dr. J. A. Meiner, together with a representative of the health committee and the council, took me in a carriage to the pesthouse and also to visit several cases which were quarantined in their homes. The usual conditions existed, namely, various physicians had declared that smallpox did not exist. All of the cases visited were unquestionably smallpox, three of them being in very severe form. The pesthouse established by the authorities was a private dwelling, well adapted for the purpose, well and clean. We found there seven smallpox patients, none sick enough to be in bed, but all having the disease in marked form. A few suggestions were made which were adopted.

Leaving Alexandria, I went to Richmond, where on the following day, February 1, I delivered before the convocation of students at Earlham College the same lecture which was given at Lafayette. It was very kindly received and a vote of thanks and confidence in the State Board of Health were passed.

February 3, New Augusta: On account of petition of citizens I visited New Augusta to inspect the schoolhouse. The inspection of the said schoolhouse was presented and acted upon at the special meeting held March 10, and will be found duly set forth in the minutes of that meeting.

February 4, Terre Haute: On this date I went to Terre Haute, in accordance with the invitation of President W. W. Parson, of the Indiana State Normal School, to lecture before the convocation of students upon the work of the State Board of Health. The lecture was well received, and I believe a good impression was made and the work of the State Board of Health was forwarded.

February 9, Edinburgh: Upon this date (Sunday) I visited Edinburgh to address the "Sunday Afternoon Men's Meetings" in the Methodist church. My subject was "Social Hygiene." The church was completely filled with men, no boys being admitted. My lecture was well received and a vote of thanks was passed.

February 19, Terre Haute: On this date, I went to Terre Haute to confer with the school authorities, the council, and the health authorities concerning the matter of introducing medical inspection of school children. I arrived about noon and spent the afternoon inspecting the school children at Hullman school. I found eight defectives in all: one little girl had consumption, other children had adenoids, enlarged tonsils and deafness. In the evening I met the authorities named above, in the rooms of the Commercial Club, and made an address upon the moral importance and the economy of the medical inspection of school children. My lecture was illustrated with examples found in the Hullman School in the afternoon. The discussion showed that an impression had been made, and it is very probable in another year we will see medical inspection of school children established at Terre Haute.

February 21, Shirley: Upon this date I visited Shirley on account of an invitation of the Shirley Improvement League, to deliver an address in the evening upon the work of the State Board of Health. A large audience gathered in the Friends' church. The lecture was well received and the usual resolutions of thanks and confidence in the State Board of Health were passed.

February 22, Fountaintown: Smallpox had prevailed in mild form at Fountaintown for some time previous to the date of my visit, and many telephone messages and letters had been received from citizens. Upon arrival at Fountaintown I was met by the health officer, and with him visited nine homes in which eruptive

diseases existed. In all but one of these homes the eruptive disease was found to be smallpox. In one of them an infant was afflicted with chickenpox. The controversy between the doctors was settled, quarantines were established, and the authorities advised to buy vaccine and offer free vaccination.

February 25, Rockville: The object of my visit at Rockville was to confer with the local authorities upon health affairs and to deliver a lecture upon "The Prevention and Cure of Tuberculosis." Upon arrival I went directly to the schoolhouse, being met at the station by the superintendent. There I addressed the high school students, telling them of the work of the State Board of Health, and presented some points upon school hygiene. The schoolhouse at Rockville is old, unsanitary and will be very soon replaced with a new one. The conference with the city authorities was agreeable in every respect, and the recommendations I made were all well received and noted by the secretary of the meeting. In the evening the court house was filled to overflowing with a large audience to hear my lecture. The same was very kindly received and the usual resolutions of thanks and confidence in the State Board of Health were passed.

March 3, Elkhart: On this date, in accordance with an invitation of the Elkhart Academy of Medicine, I visited the city to deliver my illustrated address upon "The Prevention and Cure of Tuberculosis." Upon arrival I was met by Dr. C. M. Eisenbeiss, former member of the State Board, and was taken to the public schools, where I addressed four hundred students upon the work of the State Board of Health and upon personal hygiene. In the evening the Presbyterian church was crowded to hear my lecture, which was very kindly received, and afterward the following remarkable resolutions were passed:

WHEREAS, Health is the basis of happiness, wealth and power, therefore it is

Resolved, By the citizens of Elkhart, gathered in public meeting, to consider health affairs, that the preservation and promotion of the public health is of paramount importance and demands the first attention of the state government; and be it further

Resolved, That this meeting recommends to the people that such legislation be speedily adopted as will lead to the education of the masses in the law, and the practical application of such laws to everyday life; and be it further

Resolved, That copies of these resolutions be sent by the chairman of the meeting to the Governor and Secretary of State.

March 10, Lebanon: This visit was for the purpose of addressing the Woman's Auxiliary of the Boone County Farmers' Institute. My subject was "Health in the Home." The audience room of the Methodist church was very comfortably filled, a few men being present. The lecture was given, concerning the importance of sanitary homes and the hygienic care and feeding of infants. Many questions were asked, covering a period of about one hour, and resolutions of thanks were unanimously given.

March 13, French Lick: I arrived at French Lick Friday evening, March 13, and on the following day in the afternoon addressed the Farmers' Institute at the Methodist church. My subject was "Health on the Farm." There was a good audience, and a resolution of thanks was offered. In the evening, in the same church, I delivered my illustrated lecture entitled "The Prevention and Cure of Consumption," to an audience that filled the church to overflowing, many being turned away. This lecture was also kindly received and thanks resolutions passed. On the following day (Sunday), in the same church, I addressed a man's meeting, the title being "Social Hygiene." The church was comfortably filled and many approvals of the work of the State Board of Health in the line of social hygiene were spoken by men in the audience. The same evening I addressed an audience in the Methodist church at West Baden, telling them of the work of the State Board of Health and the importance of hygiene. This lecture was also well received and resolutions of thanks given.

March 16, Ft. Wayne: Upon arrival at Ft. Wayne on this date I visited two schoolhouses with the local health authorities. Both of them were found old, unsanitary and veritable firetraps. I joined with the local board in reporting the state of affairs to the city council and the school authorities. In the afternoon I addressed the high school students, about 500 in number, upon the subject of the work of the State Board of Health. In the evening, in the high school auditorium, I addressed a public audience which was gathered under the auspices of the Electro-Technique Club upon "The Prevention and Cure of Tuberculosis." This lecture was illustrated and was well received. The Electro-Technique Club passed unanimous resolutions offering its moral support to the State Board of Health in its good work.

March 23, Francesville: Upon accounts of the prevalence of scarlet fever at Francesville, and the dissatisfaction of the citizens with the local health management, I thought it best to visit the

place and do all the good possible. Upon arrival, I called upon the health officer, Dr. J. C. Sharrer. He told me that much grippe prevailed during the winter and at the present time; the children seemed to be frequently affected with it; that some mild scarlet fever existed and a few severe cases; one death had occurred. Dr. Kelsey, a practitioner at this place, claimed that numerous cases of mild scarlet fever existed and were not being properly quarantined and the people not carefully protected. The public schools had been closed by the local authorities for ten days. I did not visit any of the cases, because that seemed unnecessary, but I did call upon the town board and the health officer; also upon the school board, and with them visited the schoolhouse. At the schoolhouse the situation was thoroughly reviewed and such recommendations were made as I thought proper. Having the authorities present, it seemed a good opportunity to call their attention to the very unsanitary schoolhouse which existed at Francesville. I therefore went over the schoolhouse with the authorities, measuring every room, and calling attention to the unsanitary conditions that existed therein. The gentlemen were all in favor of a new schoolhouse, and said that immediate steps would be taken to build one.

March 31, Marion: In response to an invitation of the Grant County Medical Society I visited Marion. The county superintendent, learning that I was to be there, invited me to address the township trustees and the association of school teachers. In the afternoon, in the auditorium of the Carnegie Library, I met the teachers' association and the trustees, and discussed the subject of school hygiene. Particular attention was given to answering the question, "What can trustees do, under present conditions, to improve the sanitary surroundings of school children?" The trustees unanimously passed a resolution that they would accept the recommendations which were made and put them into force. The traveling tuberculosis exhibit of the State Board was shown in the lecture room of the Presbyterian church. Dr. Knabe was present and demonstrated the pathological specimens and with microscopes showed the tubercle and other germs. No count was made of the number of visitors, but all afternoon they kept coming in.

In the evening an enormous audience filled the church and the chapel, which could be opened so as to give a view of the main audience room. My illustrated lecture upon "The Prevention and Cure of Tuberculosis" was well received. Warm resolutions of thanks were passed.

As a part of this report, I append the reports of visits by J. L. Anderson:

On January 27th I went to Vincennes, Knox County, Ind. Met Dr. J. M. Glenn, secretary of the County Board of Health, and inspected his books, which I found in good shape and kept up to date.

I found Dr. Glenn an efficient, progressive physician and courteous gentleman, and he is doing good work along sanitary lines. He reported health conditions good in Knox County.

I also visited Dr. P. H. Caney, city health officer, and was very cordially received. He has not received the new form of birth and death records, but has ordered them, and as soon as received will copy his reports into them. His books are well kept and up to date with that exception. He and Dr. Glenn work together in harmony and assist each other whenever necessary.

January 28th I went to Wheatland and inspected the school building there, which I found in a very unsanitary condition in regard to heating and lighting. A detailed survey is reported.

From Wheatland I drove to Washington, Daviess County, and visited Dr. A. I. Donaldson, county secretary, and Dr. R. W. Williford, secretary of city board of health.

I found both gentlemen wideawake, progressive physicians, and fully alive to the duties of their office, but with an empty treasury both in the county and city that is holding them from making many improvements that are urgently needed by the people. They both report health conditions fairly good in their jurisdictions, and with one or two exceptions they have the full co-operation of the other physicians of the county and city. I found their books in good condition and up to date.

The county secretaries both report that the returns from the physicians and deputies in the "county area" are so slow in getting to their office that they do not have time to properly record them and forward them to the State Secretary's office by the 4th of the month, and asked to have a little more time given them in which to send in their reports. They say that many of these certificates do not reach them until the 4th of the month, and that it is impossible to copy them and mail them to the State Board the same day.

I would respectfully suggest that the time be extended for the secretaries of the county boards of health to send in their certificates from the 4th of the month to the 5th of the month.

Report of visit of inspection of books of county and city health officers at Shelbyville, January 16, 1908, by J. L. Anderson:

I went to Shelbyville and called upon Dr. Harry E. Phares, secretary County Board of Health, who succeeded Dr. Kennedy as county secretary on January 1. I found him a progressive, wideawake physician, very anxious to understand and perform his duties as county health officer and willing to carry out any instructions from the State Board. The inspection of his books and records showed them in first-class condition and kept up to date.

He reports the sanitary condition of the county as good and that the county officials are co-operating with him in this work.

I visited Dr. B. G. Keeney's office, but found him out making professional calls and was unable to see him during the time I was in the city.

Report of visit of inspection to Brazil, January 18, 1908, by J. L. Anderson:

I first visited the office of Dr. L. L. Williams, secretary County Board of Health, and found him absent. From there I went to the office of Dr. Fred C. Dilley, city health officer, and found him in his office. Dr. Dilley impressed me as a conscientious, wideawake physician, and his report of the conditions of the city and the work being done there shows that he is working along the modern sanitary lines.

He reports conditions of the city fairly good, but that the funds are limited, and that he has to be careful in his expenses for the public, although the board of health is assisting him in every way that it can.

An inspection of his books shows them neatly kept and up to date in entries.

After leaving Dr. Dilley I returned to Dr. Williams' office and found that he had been compelled to go out in the country and would not be back until after the time my train would leave the city, and so was unable to interview him. The inspection of his books and blanks on hand showed that he was supplied, and that his books were in good condition.

CONSIDERATION OF SANITARY SURVEYS OF SCHOOLHOUSES.

The Secretary presented petitions from patrons of and sanitary surveys of certain schoolhouses. After consideration, it was ordered that the petitions be filed, but not spread of record, and that the full text of the surveys with the action taken be spread of record.

Inspection of school building in Dunkirk, Jay County, Indiana, March 27, 1908, by J. L. Anderson:

Site.—High and dry, comprising half a block of ground. Cement sidewalks on north and west. Old board walk to building. Water closets at rear of building in fair condition. Sexes carefully separated.

Building.—Main part built about 1868; rear part in 1891. Stone foundation 12 inches above ground. No basement or openings in foundation for ventilation. Two-story brick, with metal roof; six rooms; north front.

Hall—6 feet 9 inches by 36x14 feet; extends through to addition. Stairway 3 feet 6 inches. Hydrant in rear end under stairway.

Room No. 1 (Primary).—19x36x14 feet. Five windows with shades. Blackboards, slate. Walls papered. Floor oiled and clean, but badly worn. Heated by stove. Ventilation, windows. A window has been cut out in the west wall and a door opening outward has been put in its place, giv-

ing two exits from the room. Enrollment, 69; Average attendance, 50. Pupils in this room only attend one-half a day.

Room No. 2 (Intermediate).—Same size and conditions the same as in No. 1, except that pupils attend all day. Enrollment, 51; average attendance, 39.

Room No. 3 (in Addition).—Same size and conditions as Nos. 1 and 2. Enrollment, 48; average attendance, 40.

Hall.—Entrance on west side, about 16x16, with cloakroom 8x8, partitioned off one corner. Stairway 4 feet wide in rear part, winding to upper hall. Entrance to schoolroom under stairway. Good condition. Walls papered. Doors open outward.

Hall Upstairs in Addition.—Cloakroom and small storage room partitioned off. Fair condition.

Eighth Grade Room (Addition).—Room same size as others and about same conditions, with the exception that the floor is badly worn, being broken through in some places. Enrollment, 47; average attendance, 40.

Room No. 4.—Same size as others. Ceiling damaged by roof leaking and paper scaling off. Enrollment, 112; average attendance, 112. Pupils in this room attend but half a day.

Room No. 5.—Same conditions as No. 4. Enrollment, 70; average attendance, 54.

Hall (Old Building).—5 feet 9 inches by 7 feet. Three rooms open on this landing. Hydrant at head of stairway takes off one foot, leaving only a 3-foot passage to the stairs, which are 3 feet 6 inches wide.

This building is kept scrupulously clean, but owing to the fact of having no openings in the foundation walls there is a distinct ground odor in the lower rooms.

This building is unsanitary, inadequate to supply the room needed for the children, and cannot be rendered sanitary or an addition built without costing more than the old building is worth.

I respectfully recommend its condemnation for school purposes, the said condemnation to become effective May 30, 1908.

NOTES.

I was accompanied on my inspection by Prof. A. L. Elabarger, principal of the schools, by request of Mr. Wood, chairman of the city school board, who was unable to do so on account of lameness.

Mr. Elabarger informed me that there were 700 children of school age in Dunkirk, 100 of whom had not been in school this school year, and that there were two rooms in the south building and two rooms in the high school building that they had to use for half-day sessions in order to accommodate the pupils.

The Central school building referred to in the petition was dismissed by the board two weeks ago on account of its unsanitary condition and dangerous surroundings, and I did not visit the building. However, I was informed by two gentlemen (one of them the city treasurer), that their family physician had told them to take their children out of that building on account of its unsanitary condition, and that they knew of others that had taken their children out for the same reason.

In the evening I met the school board, Messrs. Wood, Murray and

Ward, and had a talk over the situation. These gentlemen are intelligent, progressive men, and are anxious to have a modern sanitary school building for their town, but the city council is opposed to spending money for any such purpose, as they declare the present building good enough. These gentlemen say that if the State Board condemns their building they will do all in their power to get a good building for their children.

After consideration of the above sanitary survey of the Dunkirk schoolhouse, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Dunkirk, Jay County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Dunkirk, Jay County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Pennville, Jay County, Indiana, March 27, 1908, by J. L. Anderson:

Site.—On the main street, about the center of the town, and ground occupies one town block. Cement sidewalks on all sides. Plenty of shade trees on lot. Front part of lot filled up to level of street back to main building. Rear of lot about one foot below level of street, allowing water to accumulate during wet weather. If a very hard rain, the water has run into basement of addition on west side. A driven well in front of building and about 60 feet from it. Cement walks from street to building. On north of building is a one-story frame building 30x30, used for principal's office, library and recitation room. In the rear is a frame building about 20x30 feet, used for a wood and coal house.

School Building.—This consists of a two-story, four-room brick, built in 1873, and an addition of two-story two-room brick on rear built in 1889, shingle roofed, with a belfry. The roof leaks in several places. The foundation is stone. No basement under old part. Basement under new part about 18x24x6½ feet, divided by brick wall in center and used for water closets. Excreta disposed of by burning on Saturdays. If any sewer or drain in this basement no one seems to know of it, as when the water runs into it (as it did last winter) it has to be dipped out by buckets. All windows in the lower rooms are covered by coarse wire screens to prevent breakage of glass. All doors open outward, the change being made the first of the present month by order of the state building inspector. The walls seemed in fair condition with the exception of the northeast corner, where the wall was cracked from the foundation to the roof and appeared to have started to spread. A heavy iron rod was run through

the building at the top of the first floor, which seemed to be holding it in place.

Hall, First Floor.—12x24x16 feet. Stairway at each end, winding and steep, 4 feet wide.

Primary Room (North Side Hall).—21x36x16 feet. Four windows, 4x10 feet; no blinds; upper sash nailed fast; lower sash can be raised. Two windows in north side and one in each end.

Blackboards.—Lampblack on the plaster. Plastering badly cracked in walls and ceiling. Floors badly worn. Seats old, but in fair condition. Room heated by stove. Ventilated by windows. Enrollment, 49; average attendance, 45.

Intermediate Room (South Side Hall).—The same size as primary. conditions much worse. Large pieces of plastering have fallen from the ceiling and more is likely to fall. Floor is worn through in places. Seats in bad condition. The teacher reports that she had three or four pupils whose eyes were affected by the light, and that her own eyes were hurting her, but not so badly as they had been. (This teacher had bought and put up curtains to the windows at her own expense a few days before I visited the school.) Enrollment, 45; average attendance, 45. Stove in this room smokes at times.

Upper Hall.—Same size as lower. A room 7x12x14 feet had been partitioned off for recitation room. Plastering badly cracked.

North Room.—Same size and conditions as the primary room, with the exception that water stains showed that the roof had leaked. Enrollment, 44; average attendance, 42.

South Room.—Same size as the other and same conditions. Enrollment, 36; average attendance, 35.

ADDITION.

Hall.—8x18x14 feet. Stairway 4 feet, dangerous. Banister loose and could easily be broken down. Plastering cracked and iron rod through hall. Connects with south room in old part.

Lower Room, Eighth Grade and Freshman Classes High School.—22x24x14 feet. Eight windows to room, 3½x7 feet. Blinds on south and west windows. Blackboards, slate. Floors in fair condition, seats fair, wall wainscoted to windows, plastered and papered above. Plastering badly cracked. Three iron rods run through ceiling of this room to prevent walls from spreading. Enrollment, 32; average attendance, 32. Ventilation, windows.

Upper Room, High School.—Same size and conditions as lower room, only worse. One iron rod through this room. Enrollment, 29; average attendance, 27.

Hall.—Same size as lower one, and opens into south room of old building. Plastering not so badly broken as below.

SUMMARY.

Site.—Bad. Ground should be filled up at least two feet in rear and six inches in front.

Building.—Old, unsanitary, cannot be repaired to advantage, and dangerous, I recommend that it be condemned.

NOTES.

I was accompanied in my inspection by Dr. A. W. Bloxsome, town health officer, and also by Mr. Porter, principal of the school. Dr. Samuel Mason, trustee, came into the building while I was there, and I invited him to accompany me in the inspection, but he did not have time to stay. He stated that the township was still paying interest on the bonds for building this house, but that he hoped that arrangements could be made in near future to repair it and put it in a better sanitary condition, although he thought they had done well up to the present time, and did not think they could afford to build for several years.

By putting in a sewer to the river, one-third of a mile west of the town they can keep the site of this building dry at all times and have a fine place to build.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Pennville, Jay County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Pennville, Jay County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of District School No. 12, Delaware Township, Hamilton County, Indiana, by F. A. Tucker:

Site is excellent, high, dry and good drainage. Building an old, dilapidated one-story frame house, no basement or cellar; heated by box stoves. No ventilation except by windows, which are four in number, on each side, east and west side, giving improper and very poor light. A fact that children for the past six years who have attended this school, 85 per cent. of them are compelled to wear glasses. The roof is old, leaky, plaster is off the ceiling and walls in many places. Building is flat on the ground and damp, and is in bad general repair.

Closets are full, shallow and unsanitary, and a nuisance.

I recommend the condemnation of this building for school purposes after May 15, 1908.

After consideration of the above sanitary survey of the District School No. 12, Delaware Township, Hamilton County, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse in Delaware Township, Hamilton County, District No. 12, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the schoolhouse in Delaware Township, Hamilton County, District No. 12, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Cutler, Carroll County, Indiana, March 24, 1908, by G. R. Coffin. J. D. Long, township trustee:

Site.—The location of the building is at the southwest edge of the town. The tract of ground contains about three acres, and consists of a high, well drained knoll, between which and the highway is a large gully and ditch. There is a dug well upon the premises. A gravel walk leads to the building.

Building.—The building is a two-story brick, containing four rooms. It has a stone foundation and a slate roof. It consists of an old part of two rooms and a new part of two rooms joined to the old part as an ell. The east wall of the old part is cracked in two places. There is no basement to the building. The various rooms are heated by stoves. The only means of ventilation is by the windows and doors. The lighting of the various rooms is very poor, being by windows in opposite walls. The walls, ceilings and floors were clean.

Hallways.—An upper and lower hall are located at the front of the old building. The dimensions of each are 13 by 24 feet. From these are cut off two cloakrooms in each hall, each cloakroom being 13 by 5 feet. The exits from all the rooms of the building are into these halls. A stairway leads from the lower to the upper hall. It is four feet wide to the first landing, which is a space 2 by 4 feet. Two branch stairways, each two feet wide, lead to the upper hall. The stairs are very steep, and so built as to be very dangerous in case of fire.

Primary Room, First, Second and Third Grades.—This room is located in the lower part of the old building. Its dimensions are 24 by 32 feet. It is lighted by five windows, each having a lighting space of 2 by 6 feet. Two are located in the south wall and three in the north wall. The lighting space is one-twelfth of the floor space. Twenty-five pupils occupy this room.

Seventh and Eighth grades Room.—This room is located just above the primary room, and is a counterpart of it. Thirty-four pupils occupy this room.

Fourth, Fifth and Sixth Grades Room.—This room is located in the lower part of the addition. Its dimensions are 24 by 30 feet. It is lighted by five windows, each having a lighting space of 2 by 6 feet. Two are in the south wall and three are in the east wall. The lighting space is one-twelfth of the floor space. There are 34 pupils in the room.

High School Room.—This room is located above the room just described and is a counterpart of it. The floor in this room has pulled away from the walls and is in a dangerous condition. Twenty-seven pupils occupy this room. Ten of these pupils have bad eyes.

Summary.—The heating, ventilation and lighting are very poor. The stairways are very steep and dangerous, and the arrangement makes of them a firetrap. The high school room is in a dangerous condition. Several patrons were talked with concerning the building. All agreed that it would be a waste of money to spend anything on the old building. Mr. Draper, an owner of 400 acres in the township, desires a modern building, if any money is to be expended. Mr. Shanklin, a wealthy taxpayer, thinks it inadvisable to rebuild this year, as the township is just finishing the payment for a large number of gravel roads. He promised to set forth his views to your board in a letter. Mr. McCarty, a member of the advisory board, is opposed to rebuilding at this time. J. D. Long, trustee, will abide by the decision of your board, he says. Many citizens expressed themselves as having the welfare and safety of their children at heart more than the inconvenience of an extra expense at this time. The township has no school debt. The special school fund contains \$800. The special levy is 40 cents. The property valuation is \$800,000.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Cutler, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the Schoolhouse at Cutler, Carroll County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the schoolhouse at Cutler, Carroll County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Lyons, Greene County, Indiana, March 20, 1908, by G. R. Coffin. George Carpenter, township trustee, Lyons, R. R. No. 1:

Site.—The school building is located in the eastern part of the village. The site is a favorable one. The grounds are about one acre in size.

Approaches.—The approaches to the building are good.

Building.—The building is a two-story brick, containing six rooms and hallways. The foundation is of stone. The roof is a shingle one. The walls are cracked in various places and are held together by a great many iron rods. The building consists of an old part containing four rooms, and a new part containing two rooms. The various rooms are heated by stoves, and there is no means of ventilation except by the windows and doors. The lighting is poor, the windows being so placed as to give crossed rays of light. The walls, ceilings and floors were clean.

Hallways.—There is a lower and an upper hall at the front of the old part. The dimensions of the respective halls are 15 by 25 feet. Small cloakrooms are cut off at each of the ends of the halls. A stairway leads from the lower to the upper hall. It is four feet wide up to the first landing, where it is divided into two stairways, each two feet in width, which lead to the upper hall. There is a lower and an upper hall between the old and the new parts of the building. These halls are respectively 14 by 28 feet in dimension. The east end of the upper hall is partitioned and used for a high school recitation room. This room is crowded with chairs for the pupils. A stairway, three feet wide, leads from the lower to the upper hall and lands at the door of this recitation room. The above arrangement would very likely produce disastrous results in case of a fire, as the other upper rooms open into this recitation room as a means of exit.

Primary room.—The primary room is located in the lower part of the east end of the old part of the building. Its dimensions are 24 by 30 feet. It is lighted by five windows, each 2 by 6 feet in lighting space. Four windows are in the east wall and one window is in the north wall. The lighting space is about one-twelfth of the floor space. There are 42 pupils in this room.

Fifth and Sixth Grades Room.—This room is located just above the primary room, and is a counterpart of it. There are also 42 pupils in this room.

Second Grade Room.—This room is located in the lower part of the west end of the old part of the building. It is like the primary room, except that the four windows are in the west wall. There are 44 pupils in the room.

Seventh and Eighth Grades Room.—This room is an exact counterpart of the second grade room below it. There are 43 pupils in the room.

Third and Fourth Grades Room.—This room is located in the lower part of the new part of the building. Its dimensions are 28 by 30 feet. It is lighted by six windows, each 2 by 6 feet in lighting space. Three windows are in the west wall, two are in the south wall, and one is in the east wall, thus giving crossed rays of light. There are 49 pupils in this room.

High School Room.—This room is located just above the room just described and is a counterpart of it. There are 36 pupils in this room.

Summary.—The walls of the building are cracked and in danger of collapse. The stairways and means of exit are so arranged that a very grave disaster might occur in case of fire. The heating, lighting and ventilation are very bad and no doubt have destroyed the health of many pupils. The various rooms are overcrowded. The health officer, teacher and citizens were talked with concerning the building. They expressed themselves that the building was unfit for school purposes. The township is in fair condition financially.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the school-house at Lyons, Ind., the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Lyons, Greene County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the schoolhouse at Lyons, Greene County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Brooklyn, Morgan County, Indiana, March 28, 1908, by G. R. Coffin. Dr. J. S. Spoor, township trustee:

Site.—The building is located in the southwest part of the town. The grounds comprise about three acres. The yard is of sod and gravel. The building is situated on a knoll and the grounds slope away from the building, giving good drainage. There is a good well upon the premises. Cement and gravel walks form the approaches to the building. The site is a fairly good one.

Building.—The building is a two-story brick, containing four rooms. It has a shingle roof. The building is a substantial one. It is heated with stoves. The lighting is bad. There are no means of ventilation except by the windows and doors. The floors, ceilings and walls are in a sanitary condition.

Hallways.—There is a lower and an upper entrance hall at the front of the building. The dimensions of each are 12 by 24 feet. A stairway four feet in width leads from the lower to the upper hall.

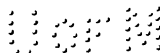
Room of Grades 1 and 2.—This room is located in the lower part of the north end of the building. Its dimensions are 25 by 28 feet. It is lighted by five windows, each having a lighting space of 2 by 6 feet. The lighting space is only about one-eleventh of the floor space. There are two windows in the east wall, two in the north wall and one in the west wall. Thirty-seven pupils occupy the room.

Room of Grades 5, 6, 7 and 8.—This room is above the one described and is a counterpart of it. Fifty-two pupils occupy the room.

Room of Grades 3 and 4.—This room is located in the lower part of the south end of the building. Its dimensions are 25 by 28 feet. It is lighted by five windows, each 2 by 6 feet. Two windows are in the east wall, two in the south wall and one in the west wall. Forty-six pupils occupy the room.

High School Room.—This room is above the one just described, and is a counterpart of it. Fourteen pupils occupy the room.

Summary and Remarks.—The building is badly lighted and poorly ventilated. It is heated with stoves. It is overcrowded. There is \$300 in the special school fund. The special levy is 15 cents. The trustees de-



sire to build an addition of two rooms to this building and put in a system of heating and ventilation.

Recommendation.—It is respectfully recommended that the building be condemned, and that if the trustee is allowed to remodel it, he submit his plans for your approval.

After consideration of the above sanitary survey of the schoolhouse at Brooklyn, the following condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Brooklyn, Morgan County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the schoolhouse at Brooklyn, Morgan County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Pittsboro, Hendricks County, Indiana, March 23, 1908, by G. R. Coffin. Wm. Hollingsworth, township trustee:

Site.—The building is located on the main street in the east end of the town. The school grounds comprise about one acre. The yard is fairly well drained. The approach is by gravel and cement walks. Altogether the site is a favorable one. There are no walks to the outbuildings. There is a driven well upon the premises.

Building.—The building is a two-story brick, containing four rooms. It has a stone foundation and a shingle roof. There is no basement to the building. An old one-story frame building has been attached to the rear and is used for school purposes. The main building is unstable. Its walls are cracked and capstones are missing. Downspouts are broken and the walls are damp and unhealthful. Floors are bad and plastering is off in patches. The rooms are heated by stoves. There are no means of ventilation except by the windows and doors. The lighting is very poor.

Primary Room, Grades 1 and 2.—This room is located in the lower part of the west end of the building. Its dimensions are 24 by 30 feet. It is lighted by five windows each 2 by 6 feet. There are two windows in each of three walls, the east, south and north. Forty pupils are in this room.

High School Room.—This room is just above the primary room and is a counterpart of it. There are 30 pupils in this room.

Fifth and Sixth Grades Room.—This room is located in the lower part of the east end of the building. Its dimensions are 24 by 30 feet. It is lighted by five windows, each 2 by 6 feet. Two are in the north, two in the east and one in the south wall. Thirty pupils occupy this room.

Seventh and Eighth Grades Room.—This room is above the one just described and is a counterpart of it. Thirty pupils occupy this room.

Third and Fourth Grades Room.—This room is a one-story frame, formerly used as a shop. Its dimensions are 20 by 30 feet. It is lighted by eight windows. Four are in the east and four in the west wall.

Hallways.—An upper and lower entrance hall are located at the south of the building. The dimensions of each are 15 by 25 feet. A stairway of proper construction and arrangement connects the lower and the upper halls.

Summary.—The building is old and inadequate for the number of pupils. The walls are cracked, and capstones are missing. It is in a state of going to rack. Heating and ventilation and lighting are very bad. The members of the advisory board do not live in the community, are not patrons, and are opposed to a new building, so it is reported.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Pittsboro, the following condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Pittsboro, Hendricks County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the schoolhouse at Pittsboro, Hendricks County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse in District No. 3, Washington Township, Jackson County, March 31, 1908, by G. R. Coffin. Jesse Collins, township trustee, Seymour, Ind., R. R. No. 5:

Site.—The building is located about five miles northeast of Seymour. It is within 100 feet of an interurban line and within 200 feet of a railroad. The ground comprises about one acre. One-fourth of it next to the highway is very often covered with several inches of water, which must be passed through to get to the building. This water sometimes gets as high as the bed of a buggy. There is a dug well on the premises. The outhouses are a menace to health. The site is a very bad one.

Building.—The building is a one-room frame. Its dimensions are 22 by 30 feet. Its ceiling is 12 feet in height. The room is lighted by six windows. There are three in the north and three in the south wall. It is heated by a stove in the center of the room. Thirty-five pupils occupy the room.

Recommendation.—It is respectfully recommended that the building and the site be condemned.

After consideration of the above sanitary survey of the schoolhouse, District No. 3, Washington Township, Jackson County, the following condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse in Washington Township, Jackson County, Indiana, District No. 3, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the schoolhouse in Washington Township, Jackson County, Indiana, District No. 3, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Windfall, Tipton County, Indiana, March 26, 1908, by G. R. Coffin. T. E. Deem, secretary of board; A. D. Daggitt, township trustee:

Site.—The building is located on the main street in the central part of the town. The grounds comprise about two acres. The yard is of sod and gravel. The location and site is a good one for a school building. There is a good well on the grounds. Gravel walks form approaches to the building.

Building.—The building is a two-story brick containing six rooms. It has a stone foundation and a slate roof. There is no basement under the building. The rooms are heated by stoves. The lighting is poor. The lighting space is only one-twelfth of the floor space. There are no means of ventilation except by the windows and doors. The old part of the building contains four rooms and the addition contains two rooms.

Hallways.—An upper and lower hallway separate the old part from the addition. The dimensions of each hall are 10 by 50 feet. Two stairways, each three feet wide, lead from the lower to the upper hall, and have the same landing, which is 3 by 9 feet in area. This landing is the exit for the three upper rooms, occupied by 146 pupils. This arrangement causes the building to be a firetrap.

Room Grades 1 and 2.—This room is located on the lower floor, in the north end of the old part. Its dimensions are 25 by 36 feet. It is lighted by six windows, each having a lighting space 2 by 6 feet. Four windows are in the north wall and two are in the east wall. Forty pupils occupy this room.

Seventh and Eighth Grades Room.—This room is located just above

the one just described, and is a counterpart of it. Thirty pupils occupy the room.

Second and Third Grades Room.—This room is located in the lower and south part of the old building. Its dimensions are 25 by 36 feet. Its lighting is the same as the rooms described, except that four of the windows are in the south wall. Fifty-two pupils occupy the room.

Fifth and Sixth Grades Room.—This room is above the one just described, and is a counterpart of it. Fifty-four pupils occupy the room.

Third and Fourth Grades Room.—This room is in the lower part of the addition. Its dimensions are 29 by 34 feet. It is lighted by six windows, each 2 by 6 feet in lighting space. Two are in the north wall and four are in the west wall. Fifty-four pupils occupy the room. A cloak-room 12 by 34 feet adjoins the room on the south.

High School Room.—This room is above and is a counterpart of the one just described, except that the room to the south is used as a recitation room. Sixty-two pupils occupy the room.

Summary and Remarks.—Heating, lighting and ventilation are very bad. The arrangement of the building is dangerous in case of fire. The building is overcrowded. Part of the board do not wish to repair or rebuild. It is a joint township and corporation school. They have no debt.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Windfall, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Windfall, Tipton County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the schoolhouse at Windfall, Tipton County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Kempton, Tipton County, Indiana, March 24, 1908, by G. R. Coffin. A. J. Griffith, township trustee:

Site.—The school is located in the south part of the town. There are about three acres in the grounds. The yard is sodded. There is a dug well on the premises. The yard is level and the surface drainage is fairly good.

Approaches.—Gravel walks lead to the building. There are no walks to the outhouses.

Building.—The building is a two-story brick building, containing six

rooms. There is an old part to the building, containing six rooms, and a new part containing two rooms, cloak-rooms, recitation rooms, etc. The walls of the old part are damaged and are supported by iron connecting rods. There is a basement under the primary room of the new part, in which is located the boiler of the heating plant of the building. The floor of this basement is not well drained. Water backs up in the basement to a depth of four feet, causing fires to be extinguished and consequently the dismissal of school. This has occurred three or four times during the past year, the last time only one week before this inspection. The promises of the patrons in their petition of June 5, 1907, to remedy this condition, has not yet been fulfilled. The building is heated by radiators placed beneath the windows in each room. The pipes of the system run along the baseboards and aid in heating. The rooms are ventilated by the window ventilators or pipes suggested by your board. The lighting space of the four rooms in the old part is about one-ninth of the floor space. In the new part of two rooms, the proportion is about one-seventh. The ceilings, walls and floors are clean.

Hallways.—An upper and a lower hall are between the old and new parts of the building. The dimensions of the halls are respectively 12 by 52 feet. Two stairways, each 3 feet wide, leading from the lower to the upper hall. The landing of the two stairways is at the same space on the upper floor. This space is 3 by 7 feet in area. The exit of the front upper room is also upon this space. The east stairway runs just above the south end of the furnace. A fire started at that point could easily and quickly reach the stairway.

Primary Room.—This room is located in the lower part of the new part of the building. Its dimensions are 27 by 30 feet. The room is lighted by six windows, the lighting space of each being about $2\frac{1}{2}$ by 7 feet. Three are in the east wall and three are in the north wall. A storage room 12 by 16 feet and a cloak-room 12 by 11 feet open off from this room. There are 30 pupils in the primary room.

High School Room.—This room is located just above the primary room, and is a counterpart of it. A recitation room 12 by 27 feet is located to the west of this room. There are 36 pupils in the high school room.

Third and Fourth Grades Room.—This room is located in the lower and east part of the old building. Its dimensions are 26 by 36 feet. The room is lighted by six windows, the lighting space of each being $2\frac{1}{2}$ by 7 feet. Four windows are in the east wall and two are in the south wall. There are 47 pupils in this room.

Seventh and Eighth Grades Room.—This room is located above the room just described, and is a counterpart of it. There are 36 pupils in this room.

Fifth and Sixth Grades Room.—This room is a counterpart of the ones just described, except that the four windows are located in the west wall instead of the east wall. Thirty-four pupils occupy the room.

Ninth and Tenth Grades Room.—This room is above the one just described, and is a counterpart of it. Thirty-seven pupils occupy the room.

Summary.—The walls of the old part are in bad condition. The basement under the new part is in very bad condition, and is a menace to the health of the pupils. The arrangement of the stairways is such as to



endanger lives in case of fire. The ventilation and lighting of the building is poor.

The high school principal states that he does not wish the building condemned, as it might lose them their high school commission. He says the building is good enough, better than many others; that the people do not wish a new building, that the advisory board will not build a new one, and that he will possibly teach in the new Kirklin building next year.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Kempton, Ind., the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Kempton, Tipton County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the schoolhouse at Kempton, Tipton County, Indiana, is condemned for school purposes, and shall not be used for said school purposes, after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of high school building at Mays, Rush County, Indiana, April 8, 1908, by G. R. Coffin. W. A. Lord, township trustee:

Site.—The building is located about one and one-half miles west of Mays, Indiana. The grounds comprise about two acres. The yard is well-sodded and fairly well drained. There is a driven well on the premises. There are gravel roads serving as approaches to the building. The site is a suitable one.

Building.—The building is a two-story frame structure, containing three rooms. It has a stone foundation and a slate roof. There is no basement under the building. The building is heated by stoves. There are no means of ventilation except by the doors and windows. The lighting is very poor. The roof leaks, making the ceilings and walls damp.

Hallways.—A lower and an upper entrance hall are located at the front of the building. The dimensions of each are 12 by 24 feet. A winding stairway, three feet wide connects the halls. It is steep, dangerous and a firetrap.

Room of Grades 1, 2, 3 and 4.—This room is located in the lower part of the east end of the building. Its dimensions are 25 by 30 feet. It is lighted by four windows, each 2 by 7 feet in lighting space. Two are in the east wall and one each in the north and south walls. The lighting space is about one-tenth of the floor space. Thirty-five pupils occupy the room.

Room of Grades 5, 6, 7 and 8.—This room is located in the lower part of the west end of the building. It is a counterpart of the east room, except that two windows are in the west wall instead of the east wall. Forty-three pupils occupy the room.

High School Room.—This room occupies the upper floor of the building. Its dimensions are 30 by 50 feet. It is lighted by eight windows, each 2 by 7 feet in lighting space. The lighting space is about one-tenth of the floor space. There are two windows in each wall. Twenty-five pupils occupy the room. This room was filled with smoke from the two stoves which heat the room. The teacher stated that there was always smoke in the room when the wind is from the south or west.

Summary and Remarks.—The heating, ventilation and lighting are bad. The stairway is dangerous and is a firetrap. The building is unfit for school purposes. The trustee asked for this inspection and wishes a modern building.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Mays, Ind., the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the high school building at Mays, Rush County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the high school building at Mays, Rush County, Indiana, is condemned for school purposes, and shall not be used for said school purposes, after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Brownsburg, Hendricks County, Indiana, March 23, 1908, by G. R. Coffin. J. A. Morgan, secretary:

Site.—The building is located in the southeast part of the town. There are about three acres in the grounds. The grounds are well shaded and good drainage is possible. There is a driven well on the premises. The site is a suitable one for a school building.

Building.—The building is a two-story brick, consisting of an old part of four rooms and an addition of two rooms. It has a brick foundation and a shingle roof. Its walls are cracked and crumbling at the base. The school board has abandoned school except high school, for fear of a disaster from collapse or fire. High school is to be carried on in the lower room of the addition. The building is heated by stoves. There are no means of ventilation except by the windows and doors. The lighting of the rooms is very poor.

Hallways.—An upper and a lower hall are located between the old part of the building and the addition. The dimensions of these halls respectively are 13 by 25 feet. A winding stairway connects the halls and is arranged in such a manner as to make a firetrap of the building. It is three feet wide.

First and Second Grades Room.—This room is located in the lower part of the south end of the old part of the building. Its dimensions are 24 by 26 feet. It is lighted by five windows, each 2 by 6 feet in lighting space. Three are in the south wall, one in the east and one in the west wall. Thirty-five pupils are in this room. Two pillars uphold the floor above.

Seventh and Eighth Grades Room.—This room is above the primary room, and is a counterpart of it. It is occupied by 40 pupils.

Fifth and Sixth Grades Room.—This room is located in the lower part of the north end of the old part of the building. Its dimensions are 20 by 26 feet. It is lighted by five windows, each 2 by 6 feet in lighting space. It is occupied by 30 pupils.

High School Room.—This room is located just above the one just described, and is a counterpart of it. Forty pupils occupy the room. Nineteen of these pupils complained of colds and throat trouble. Three-fourths of them expressed that they were drowsy and lacking in energy after being in the room a few minutes. The teacher and most of the pupils showed flushed faces.

Third and Fourth Grades Room.—This room is located in the lower part of the addition. Its dimensions are 23 by 25 feet. It is lighted by five windows, each 2 by 6 feet in lighting space. Two windows are in the west wall and three are in the north wall. Forty pupils occupy the room.

Second High School Room.—This room is just above the one just described, and is a counterpart of it. It is occupied by 30 pupils.

Summary and Remarks.—The building is old and in danger of collapse. It is a firetrap. Its heating, ventilation and lighting are very poor. Its light space is only one-ninth of its floor space. It is a disease-breeding building. The community would be better off without any school at all. The town would have to exceed the legal 2 per cent. indebtedness to erect a building. The school board is favoring the calling of an election to do away with the corporation.

Recommendation.—It is respectfully and urgently recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Brownsburg, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Brownsburg, Hendricks County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency; therefore, it is

Ordered, That the schoolhouse at Brownsburg, Hendricks County, Indiana, is condemned for school purposes, and shall not be used for said

school purposes, after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Markleville, Madison County, Indiana, April 7, 1908, by G. R. Coffin. A. W. Fatic, township trustee:

Site.—The building is located on the main street, at the south end of the village. The grounds comprise about one acre. The yard is fairly well drained. There are no walks leading to the building. There is a driven well upon the premises. The site is a favorable one.

Building.—The building is a two-story brick, containing two rooms. It has a stone foundation and shingle roof. There is no basement under the building. The building is heated with stoves. There are no means of ventilation except the doors and windows. The lighting is bad. The walls, ceilings and floors are worn and unsanitary.

Lower Room.—The lower room is occupied by grades 1, 2, 3 and 4. Its dimensions are 28 by 29 feet. It is lighted by six windows, each having a lighting space of 2 by 8 feet. Three of the windows are in the north wall and three are in the south wall. The lighting space is about one-eighth of the floor space. The ceiling is supported by two wooden 4 by 4-inch props. The room is occupied by 50 pupils.

Upper Room.—This room is occupied by grades 5, 6, 7 and 8. It is a counterpart of the lower room. The floor is sagged. It is in a dangerous condition. Forty pupils occupy the room.

Hallway.—There is a lower and an upper entrance hall, each 12 by 12 feet, located at the front of the building. A stairway three feet wide connects the halls. The upper landing is 3 by 3 feet in dimensions and the exit of the upper room is on the landing. The stairway is steep and winding. It is a firetrap.

Summary and Remarks.—Heating, ventilation and lighting are bad. The upper floor is in an unsafe condition. The stairway is a firetrap. The building, as a whole, is unsanitary. The township is free of indebtedness. The tax levy is low. The great bulk of the citizens desire a modern building.

Recommendation.—It is respectfully recommended that the building be condemned.

After consideration of the above sanitary survey of the schoolhouse at Markleville, Ind., the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Markleville, Madison County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, It is

Ordered, That the schoolhouse at Markleville, Madison County, In-

diana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at New Winchester, District No. 4, Hendricks County, Indiana, April 6, 1908, by J. L. Anderson:

Site.—The building is located in the south part of the town. The grounds comprise about three acres, yard well sodded, and buildings set about center of grounds. Ground slopes away from building in all directions, giving good drainage. There is a good driven well about 60 feet east of the building, with a drain for waste water, which carries it out to the road gutter. A frame coal-house 8 by 12 feet is just in the rear of building, and a large barn is on the northwest corner of the yard, for stabling horses of pupils who have to drive to school. A gravel walk leads to the building from the street. Girls' water-closet is in fair condition and screened, but surroundings are muddy and bad. Boys' closet is on the opposite side of yard, in fair condition, but no screens. No walks to closets. The site is a good one.

Building.—The building is a two-story brick, containing four rooms, facing east. It has a belfry and metal roof. It has no basement. The foundation is of stone, with openings for ventilation in sides. It is practically on top of the ground, only extending 15 inches below the surface. The ground was filled up about the house two years ago. The walls are badly cracked and crumbling. The stone sill over the front door is broken by the setting of the wall at that place, and brick can be picked out of the wall under the southeast window clear into the schoolroom. Three of the stone window sills are broken by the settling of the walls. The floors of the lower rooms and hall are 18 inches above the ground. All the rooms are heated by stoves, and there are no means of ventilation except by doors and windows. There are wire screens outside all windows and good shades on the inside.

Hallways.—There is a lower and an upper hall at the front of the building, with double doors opening inward at lower entrance. Size of halls 8x20x12 feet. Wooden strips have been nailed on the walls at the north end of these halls, which serve for cloak-rooms. The stairway is at the south end, with loose wooden banister. Stairway 3 feet wide, with two turns and 3x3-foot landings about 5 feet from floor. Floors of halls badly worn and plastering cracked, especially above front entrance. Water-stains on upper hall.

Primary and Second Grade Room.—This is on the lower floor and south side of entrance. Size, 18½x20½x12 feet. Is lighted by four windows, one on the east, two in the south end and one on the west, each 2½ by 7 feet. There is a door in west side with transom over it. Walls plastered and tinted with calcimine, ceiling sealed with narrow tongued and grooved boards. Walls show water-marks where water has run down from upper floor. Plastering broken under east window, allowing wind to blow into room. Blackboards, lampblack painted on plaster. Seats old, but of suit-

able size and in fair condition. Floor worn and has cracks between some of the boards one-half inch in width. Stove smokes, and the janitor informed me that the stoves in all the rooms smoked and he thought the flues were too small. Enrollment, 28; average attendance, 25.

Third and Fourth Grade Room.—This room is on the north side of lower floor, is the same size as the first room, and the same arrangement of doors, light, etc. The walls have been papered, but owing to the water running down from above, and dampness of walls, the paper is all coming off, showing the plastering to be badly cracked. The floor is in worse condition, if possible, than the first room. Enrollment, 33; average attendance, 27½.

Fifth, Sixth and Seventh Grades.—This room is the north room upstairs, and same size as lower rooms. Lighted by two windows in west, two in north and one in east side. Walls plastered and calcimined and ceiling sealed as below. Blackboards, wood, painted black. Plastering cracked and window casings loose. A person walking across the room shakes the floor and windows, showing that it affects the walls. Watermarks on sides of walls and around windows. Enrollment, 33; average attendance, 27.

Elghth Grade and High School.—Same size and arrangement as north room; conditions a little worse, as the superintendent reports that the roof leaks worse over this room. Water runs into the room so fast that school was dismissed one day in February and the janitor had to scoop the water off the floor and carry out in buckets. Enrollment, 29; average attendance, 25.

Summary.—I find the building unsanitary and absolutely unsafe, the rooms overcrowded and unable to accommodate the number of pupils that are entitled to attend school. That there was a great deal of complaint on account of colds and sore throat this winter, and all persons talked with expressed themselves to the effect that the building was unfit for school purposes.

I would respectfully urge that the building be condemned, to take effect May 3, 1908.

After consideration of the above sanitary survey of the schoolhouse at New Winchester, Ind., the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at New Winchester, District No. 4, Hendricks County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the schoolhouse at New Winchester, District No. 4, Hendricks County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, trustees, any teacher or any person uses said schoolhouse for school purposes after the date above named, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

SPECIAL MEETING OF THE INDIANA STATE BOARD OF HEALTH.

MAY 14, 1908.

Called to order by President Tucker at 12 m.

Present, Drs. Tucker, McCoy, Davis and Hurty.

The President announced the object of the meeting was to attend the Annual Health Officers' School, and conduct the same, and to attend to such business as it might seem proper to consider.

The Secretary reported that 276 officers were in attendance at the annual school, that all were interested and that the program was being closely followed. The welcoming address, by Hon. Alford Potts, representing the Indianapolis Commercial Club, was an excellent series of comments upon public health work, and the duties of the health officers. He also told of certain sanitary observations made in Europe, and especially referred to the distribution of milk.

SANITARY SURVEYS OF SCHOOLHOUSES.

The following surveys of schoolhouses, all made because of petitions of patrons, were duly considered and acted upon:

Inspection of school building at Coalmont, District No. 13, Lewis Township, Clay County, Indiana, April 16, 1908, by G. R. Coffin:

George Phegley, Trustee, Lewis, Ind.

Henry Watkins, Advisory Board, Lewis, Ind.

Marsh Mattox, Advisory Board, Lewis, Ind.

George Miller, Advisory Board, Jasonville, Ind.

School.—The school is a township school located in Coalmont, Ind. It is situated in the northwest part of the town.

Site.—The grounds are low and flat and are poorly drained. The grounds are within a distance of one mile from a powder mill, where are stored some ten or twelve thousand kegs of powder. Coal has been mined up to the school grounds. The ground surface next to the school grounds has sunk and great stagnant pools abound. The site is unfit for school purposes.

Building.—The building is a two-story brick containing two rooms. It has a stone foundation and a slate roof. There is no basement under the building. The building is heated by a stove on each floor. A pipe leads from the lower stove up through the ceiling and floor in their center. It goes up through the upper room ceiling to the roof. Water must be poured

on this pipe to keep the floor and ceiling from being set on fire. The arrangement of the stovepipes certainly makes the building a firetrap. The windows and doors are the only means of ventilation. The lighting is bad.

Hallways.—A lower and an upper entrance hallway are located at the front of the building. The dimensions of each are 14 by 15½ feet. A winding stairway three feet wide leads from the lower to the upper hallway. This stairway is very steep and is dangerous.

Lower Room.—The lower room is occupied by Grades 1, 2, 3 and 4. The dimensions of the room are 22 by 32 feet. It is lighted by six windows, each 2½ by 6 feet in lighting space. Two are in the east wall, two in the south wall, and two in the north wall. The lighting space is about one-eighth of the floor space. This room is occupied by 60 pupils.

Upper Room.—This room is occupied by Grades 5, 6, 7 and 8. It is a duplicate of the lower room. It is occupied by 68 pupils.

Summary and Remarks.—The site is very bad. The heating, lighting and ventilation are bad. The manner of heating makes a firetrap of the building. The building is not large enough to properly accommodate over one-half of the pupils. The powder mill is plainly in view from the schoolhouse and is not conducive to the proper peace of mind of either the pupils or teachers. Recently, after an explosion of some four hundred kegs of powder at the mill, the patrons of the school held a mass meeting and there has been no school since. The township is not in debt. The taxable property is listed at \$1,094,655. The special levy is 15 cents.

Recommendation.—It is respectfully recommended that the school building be condemned.

After full consideration of the above sanitary survey of the schoolhouse at Coalmont, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Coalmont, Lewis Township, Clay County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Coalmont, Lewis Township, Clay County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health, May 14, 1908.

Inspection of schoolhouse at Oxford, Benton County, Indiana, April 23, 1908, by G. R. Coffin:

Board of Education.—A. H. Maguire, President; Dr. H. G. Bloom, Secretary; William Lawson, Treasurer.

School.—The school is a grade and high school of the corporation of Oxford, Ind. It is under the control of the above-named officials. It is located in the southwestern part of the town.

Site.—The school grounds consist of a tract of about four acres. The tract is high and well drained. It contains many beautiful trees and the yard is well sodded. Plank walks lead to the buildings. The water supply is from the city water system.

Building.—The building is a two-story brick, containing eight rooms and six hallways, three on each floor. It has a stone foundation and a shingle roof. There is an old part of four rooms, and to this has been built two additions, one on each side. The walls of the old part are cracked badly in many places and are in a dangerous condition. Since the construction of the building two places have been dug out beneath it and furnaces installed. Passages have been tunneled from one furnace to the other, and in one place the foundation has been undermined. One furnace is located under the main exit of the building, and inspection shows that the timbers near it have been much overheated. It makes of the building a firetrap of the very worst kind. A disaster has been averted only through the vigilance of a trustworthy janitor. Your inspector ordered the school officials to refrain from further use of this furnace. The lighting of the building is very poor. The ventilation is by means of the windows and doors. The floors of the building are old, worn and dangerous in places. The ceilings and walls are cracked in many places.

Hallways.—The main entrance hall is located between the old part and the east addition. Its dimensions are 14 by 28 feet. A stairway four feet wide leads from the lower to the upper hall. Hallways lead from the main entrance halls through the old part and connect with halls between the old part and the west addition. The dimensions of the connecting halls are 7 by 32 feet. The dimensions of the hall between the old part and the west addition are 6 by 18 feet.

First and Second Grades Room.—This room is located in the south end of the old part, on the lower floor. Its dimensions are 17 by 32 feet. It is lighted by four windows, each 2 by 6 feet. Two are in the south wall, one in the west wall and one in the east wall. The lighting space is about one-eleventh of the floor space. Forty-six pupils occupy this room.

Main High School Room.—This room is above the one just described and is a duplicate of it. It is occupied by 65 pupils.

Third and Fourth Grades Room.—This room is in the lower part of the west addition. Its dimensions are 23 by 28 feet. It is lighted by six windows. The north, south and west walls each have two windows. There are 44 pupils in this room.

High School Room No. 2.—This room is above the one just described, and is a duplicate of it. Forty pupils occupy the room.

Fifth and Sixth Grades Room.—This room is located in the lower part of the east addition. Its dimensions are 26 by 28 feet. It is lighted by four windows. Two are in the east and two in the south wall. Fifty-two pupils occupy the room.

Seventh and Eighth Grades Room.—This room is above the room just described and is a duplicate of it. Thirty-eight pupils occupy the room.

Storage Room.—This room is located in the lower part of the north end of the old building. Its dimensions are 18 by 32 feet.

Library, Recitation and Office Room.—This room is above the storage room, and is a duplicate of it.

Summary and Remarks.—The building is old, worn and in a dangerous condition. It is a firetrap. It is totally unfit for school purposes, the lighting, ventilation and arrangement of the rooms being very bad. The lives of the pupils and teachers are in danger from fire, collapse of walls and disease. The school officials desire to rebuild. The limit they can raise for building purposes is \$16,000, this being 2 per cent. allowed by law. Many township pupils attend this school, but the township officials do not wish to help build an adequate building. The community is a wealthy one.

Recommendation.—It is respectfully recommended that the building be condemned and that no extension of time be given.

After full consideration of the above sanitary survey of the schoolhouse at Oxford, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Oxford, Benton County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Oxford, Benton County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health May 14, 1908.

Inspection of schoolhouse at Fort Branch, Union Township, Gibson County, Indiana, April 17, 1908, by G. R. Coffin:

S. N. Tribble, trustee; Geo. C. Sollman, advisory board; Jas. E. Beloit, advisory board; William Pumphrey, advisory board.

School.—The school is a township grade and high school. It is located in the south end of the town. The school officials are as named above.

Site.—The school grounds comprise a tract containing about four acres. The grounds are high, well drained and sodded. There is a dug well near the building. Gravel walks lead to the building.

Building.—The building is a two-story brick containing six rooms. It has a brick foundation and a basement under the east wing of the building. The walls of the building are cracked in many places. In the north wall, a crack extends from top to bottom and clear through the wall. The walls are in a dangerous condition. The ceilings and walls of the rooms show

cracks in various places. The walls are damp. The building is kept very clean. It is heated by means of steam heat, the radiators in the several rooms being placed beneath various windows. It is impossible to properly heat the building during cold, windy weather. Windows and doors are the only means of ventilation. The lighting is very poor, the windows being so placed as to cause crossed rays of light.

Hallways.—An entrance hall 21 by 25 feet is located at the front of the building, and three wings of the building run off from this hall. Two stairways, each four feet wide, lead from the lower to the upper entrance hall. In these halls are located various small cloak-rooms and closets.

First and Second Grades.—The pupils of these grades occupy a frame building located on a lot across the street from the main building.

Third Grade Room.—This room is located on the lower floor in the north wing of the building. Its dimensions are 25 by 31 feet. It is lighted by seven windows. Three are in the west wall and two each in the north and south walls. The room is occupied by 44 pupils.

Seventh and Eighth Grades Room.—This room is a duplicate of the room just described, and is located just above it. It is occupied by 35 pupils.

Fourth Grade Room.—This room is located in the lower part of the south wing of the building. Its dimensions are 25 by 31 feet. It is lighted by seven windows. Three are in the west wall and two each in the south and east walls. The room is occupied by 40 pupils.

Sixth Grade Room.—This room is located above the fourth grade room, and is a duplicate of it. Forty pupils occupy the room.

Fifth Grade Room.—This room is located in the lower part of the east wing of the building. Its dimensions are 21 by 39½ feet. It is lighted by eight windows. Three are in the north wall, three in the south wall and two in the east wall. Forty-eight pupils occupy the room.

High School Room.—This room is located above the fifth grade room, and is a duplicate of it. Thirty-five pupils occupy the room.

Summary and Remarks.—The walls of the building are cracked and in a dangerous condition. The heating, lighting and ventilation are bad. The building is inadequate for the number of pupils. There is no school indebtedness. The taxable property is close to two millions of dollars. The special tuition levy is 15 cents.

Recommendation.—It is respectfully recommended that the building be condemned.

After full consideration of the above sanitary survey of the schoolhouse at Fort Branch, the following condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Fort Branch, Union Township, Gibson County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Fort Branch, Union Township, Gibson County, Indiana, is condemned for school purposes, and shall not

be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health May 14, 1908.

Sanitary survey of high school building at Franklin, Johnson County, Indiana, May 13, 1908, by J. N. Hurty, M. D.:

Site.—The site is satisfactory in every respect, except that it is not large enough. There is too little space for playgrounds. The area of the site should be at least three times as great. It is well-drained, and well surrounded by outhouses of private residences. The outhouses of this school are of the old vault type, and although kept in passable condition, are objectionable from every point of view.

The Building.—The building is a two-story brick, originally consisting of eight rooms, four in the first story and four in the second. Subsequently, a further addition of eight rooms was made on the south side, and a large high school room constructed over this addition. The stairways are narrow, steep and of many turns. The halls are narrow, and not well lighted. There is no basement under the building, except at one of the corners, where an excavation has been made for a steam boiler. The walls are cracked in various places, the rooms are overcrowded, and many have been divided with partitions in order to secure class-rooms. The ventilation of all the rooms is by windows and doors, the heating is by direct radiation, and not one of the rooms is properly lighted. Under such circumstances it seems unnecessary to make a separate measurement and survey of each room.

Recommendation.—I recommend that this building be condemned as unsanitary and as unfit for school purposes.

After consideration of the above survey of the high school building at Franklin, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the high school building at Franklin, Johnson County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said high school building at Franklin, Johnson County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teachers or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health May 14, 1908.

Inspection of schoolhouse at Orland, Steuben County, Indiana, May 10, 1908, by Dr. W. H. Lane, secretary County Board Health. Charles H. Turner, trustee:

Site.—Large lot, 9 by 16 rods, west side of North and South streets. Faces east. About one block from the principal cross-streets in the village.

Buildings.—Buildings consist of two old buildings moved side by side, leaving space of about 15 feet between, with an entrance or hallway placed between them, thereby admitting entrance to either building from the center doorway. Also one door that opens directly in front of each lower room into a small, narrow hallway, thereby giving two narrow doors to each room. Buildings located about the center of the lot, east, west, north and south. These buildings are old wooden structures, having been built between 50 and 60 years, known in early days as "Old Northeastern Institute." Foundations of stone, no basement, and consisting of four rooms, heated by large wood and coal stove located in or near the center of the rooms; ventilated by windows; holes in the side walls and ceilings; playgrounds dry and very well drained, with coarse gravel walks leading from the front main street. Water supply by driven well said to be about 16 feet deep, located immediately in front of the main hall.

Outhouses (2), one for male and one for female, each located on opposite side of lot; wooden, in poor state of repair, with wooden box for cleaning purposes. Floors and seats bad and broken.

South room down stairs, 27 by 29 feet, three windows on the north side, three windows on the south side; hall across front 7 by 27 feet, from which two doors enter each room, down and upstairs. Twelve lights in each window, size 10 by 4 inches. Size of whole window 3 by 6 feet. All downstairs windows screened in with heavy woven wire screens.

North room, downstairs, 27 by 30 feet. Three windows on the north side, three windows on the south side, two windows on the west end; hall across the front of this room, 12 by 15 feet, from which only one very small door enters this downstairs room. All windows and lights about the same size, 10 by 14 inches, and 3 by 6 feet; upstairs, 3 by 5 feet. A court between the two buildings in the rear, about 15 feet wide, closed in front by hall 12 by 15 feet, which supports coupola and bell. Hall walls are badly broken, plaster and lath litter the floors; stairs narrow, with landing and turn one-half way up. Ceiling of north rooms of wooden strips and in several places are hanging loose and badly broken; floors and ceilings are supported by four square posts placed in quarters over the room floors.

North building is the oldest, built about 1848. There are four teachers and between 155 and 160 pupils. The ceilings of south rooms are about 11 feet, north floor downstairs ceiling 9 feet, north floor upstairs ceiling 10½ feet.

Blackboards, two south rooms, are in the west ends. Blackboards north rooms, along the east ends and sides, between the windows and doors.

Buildings and general surroundings are in very bad state, and in need of much repair to floors, walls, ceilings, doors, and stairs.

Recommendation.—It is respectfully recommended that the schoolhouse at Orland be condemned.

After full consideration of the above sanitary survey of the schoolhouse at Orland, the following proclamation of condemnation was adopted:

PROCLAMATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Orland, Steuben County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore, it is

Ordered, That the said schoolhouse at Orland, Steuben County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after June 1, 1908, and if any school trustee, or trustees, any teacher or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health May 14, 1908.

THIRD REGULAR QUARTERLY MEETING.

JULY 8, 1908.

Affairs considered of the second calendar quarter and of the third fiscal quarter.

Called to order by President Tucker at 12 m.

Present, Drs. Tucker, McCoy, Davis and Hurty.

The Secretary announced that the Conference of Municipal and Private-Owned Water Plants of Indiana with the State Board of Health, as per call of the board, was in session and awaited the presence of the board. It was accordingly moved by Dr. McCoy that the board attend the conference it had called in the interests of the public health, and that it be adjourned until 12:30 p. m. the following day, July 9, 1908.

ADJOURNED MEETING AS PER MOTION MADE JULY 8, 1908.

JULY 9, 12:30 p. m.

Called to order by President Tucker.

Present, Drs. Tucker, Wishard, Hurty, McCoy and Davis.

Minutes of the last regular and the special meeting of May 14th read and approved.

Secretary's report for the quarter ending June 30, 1908, read and ordered spread of record.

REPORT OF SECRETARY FOR CALENDAR QUARTER ENDING JUNE 30th.

The work and affairs of the office have proceeded satisfactorily during the quarter. Proclamations of condemnation for all the schoolhouses condemned at the last meeting were promptly made out and forwarded. In two instances strong opposition sprung up, namely, at New Augusta, Pike Township, Marion County, and at Pennville, Penn Township, Jay County. At the first-named place the opposition proceeded from the trustee and a number of persons who were opposed to a new schoolhouse. The advisory board favored a new building. At Pennville the people are unanimously in favor of a new schoolhouse, while the trustee and advisory board are opposed. At this time both schoolhouses remain closed. No steps have been taken to build new ones or make the old ones sanitary.

BIRTH STATISTICS.

It was found necessary, on account of lack of money, to stop the collection of names of infants in conjunction with birth statistics. This had cost in postage about \$100 a month. Our records, therefore, will be very deficient this year in this particular.

The birth and death rates for the months composing the quarter were:

<i>April.</i>	<i>May.</i>	<i>June.</i>
Death rate..... 13.2	Death rate..... 11.8	Death rate..... 10.7
Birth rate..... 19.7	Birth rate..... 19.4	Birth rate..... 19.4

The birth rate and death rate for the quarter were respectively:

Death rate..... 15.2 Birth rate..... 19.5

The following tables show the status of smallpox and typhoid fever for the quarter:

SMALLPOX COMPARISON FOR SECOND QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
April, 1907.....	91	1	20
April, 1908.....	324	2	35
May, 1907.....	149	1	23
May, 1908.....	275	0	33
June, 1907.....	119	1	31
June, 1908.....	97	3	21
Total, 1907.....	359	3	74
Total, 1908.....	696	5	89

TYPHOID FEVER COMPARISON FOR SECOND QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
April, 1907.....	280	38	37
April, 1908.....	195	35	36
May, 1907.....	204	32	31
May, 1908.....	91	27	26
June, 1907.....	298	25	37
June, 1908.....	127	27	45
Total, 1907.....	782	95	106
Total, 1908.....	416	89	107

Nineteen visits were made by the Secretary as follows:

April 7, Stilesville, account of unsanitary schoolhouse.

April 11, Hammond, account of meeting with the Lake Michigan Water Commission.

April 20, Ft. Wayne, account of meeting of the Allen County Medical Society, and account of smallpox at Angola.

April 25, Spencer, account of unsanitary schoolhouse.

April 26, Plymouth, to confer with local Board of Health in regard to local sanitary questions and deliver a public address upon the "Prevention and Cure of Tuberculosis."

May 1, Kokomo, to deliver a public address upon the "Cure and Prevention of Tuberculosis," and to meet with the local medical society.

May 5, Bloomington, to confer with the president and faculty of Indiana University in regard to the teaching of hygiene.

May 11, Crawfordsville, to confer with the local health authorities in regard to local health conditions and consult concerning smallpox, and also to lecture before the high school upon hygiene and the public health.

May 13, Franklin, on account of unsanitary schoolhouse.

May 16, Pennville, account of unsanitary schoolhouse.

May 20, Bloomington, to confer with faculty of Indiana University in regard to teaching of hygiene.

May 22, Windfall, on account of unsanitary schoolhouse.

May 28, Greenfield, to deliver a public lecture before the Woman's Civic Association upon "Hygiene."

June 2, Hammond, to confer again with the Lake Michigan Water Commission in regard to the pollution of Lake Michigan.

June 10, Richmond, to attend a meeting of the Wayne County Medical Society, and to confer with the mayor and board of health.

June 16, Seymour, to confer with local authorities in regard to health affairs, and to deliver a public address upon "School Hygiene and the Medical Inspection of School Children."

June 18, French Lick, on account of the annual meeting of the State Medical Society, and to confer with the authorities of French Lick in regard to sewers and the public water supply.

June 22, Wawasee, to attend the Indiana State Pharmaceutical Society on account of discussion of the Pure Food and Drug Law, and to make sanitary survey of the lake.

Detailed accounts of these visits are herewith given:

Stilesville, April 7: The State Board had condemned the schoolhouse at Stilesville. This created much opposition and public outcry. In consequence the trustee, being strongly in favor of a new schoolhouse, and his advisory board, invited and urged the Secretary to visit Stilesville, meet the people and make a public address. Accordingly on April 7 I visited Stilesville, again made a survey and, at the schoolhouse, which was crowded with citizens, made an address upon "School Hygiene." The visit seems to have had a good effect, for opposition was largely allayed, and now the new schoolhouse is going forward.

Hammond, April 11: The health authorities of Wisconsin, Illinois, Indiana and Michigan met on this date, together with the health authorities and representatives of the government of the cities of Milwaukee, Chicago, Gary, East Chicago, Michigan City, and Hammond. The object was to consider the present sanitary condition of Lake Michigan, which is the source of water supply of the cities named. Dr. W. A. Evans, Health Commissioner of Chicago, made a report of his investigations, which plainly set forth the fact that Lake Michigan, despite the great Chicago drainage canal, is constantly threatened with pollution. The ques-

tion was, what could be done to prevent the pollution of the lake? The subject was discussed in almost every phase, and finally an organization was effected, to be known as The Lake Michigan Water Commission. A committee was appointed to draw up a form of organization and to report at a future meeting.

Ft. Wayne, April 20, Angola, April 21: On the first date named I went to Ft. Wayne, and on the evening of the 20th delivered an address at Concordia College before a large audience, under the auspices of the institution. On the following day I attended a meeting of the Allen County Medical Society, and read a paper upon "The Medical Inspection of School Children," and the same day visited Angola, in Steuben County, on account of smallpox. Smallpox had prevailed at Angola for at least one month, and the authorities of the town and the health officer of the county had twice requested a visit from the State Board of Health. Being at Ft. Wayne, near by, I visited Angola. Together with Dr. Brayton, who accompanied me, twelve families were visited. We found two cases of very severe and serious smallpox. The other cases were of varying degrees of mildness. Three physicians of the town had been calling typical smallpox "pustular dermatitis." The diagnosis was ridiculous. The errors of these three physicians had caused much trouble and expense, and to settle the matter the authorities named had urged a visit from the State Board. The physicians who were in error were called in before the mayor and city council and told plainly that they must hereafter, and until further notice, report all cases of eruptive diseases, with which they come in professional contact. Upon receipt of report the county and city health officers will visit the cases and determine whether or not they should be quarantined. The mayor expressed himself as thankful for the visit, and said that from this time on he would know how to conduct matters.

Spencer, April 25: Upon petition of the school board and the county and city health officers, I visited Spencer to examine the high school building. We went all over the structure; defects were pointed out and also the remedy which should be applied. The school board, being present, promised to make repairs and changes suggested.

Plymouth, April 26: At Plymouth I met the county and town health officers, and with them considered several unsanitary conditions and how to remedy them. In the evening, at the Methodist church, before an audience filling the auditorium, I delivered my

regular illustrated lecture upon "The Cure and Prevention of Tuberculosis."

Kokomo, May 1: In the evening of this date I read a paper before the Howard County Medical Society upon "The Medical Inspection of School Children." The superintendent of public schools, the county superintendent, and many teachers were present. The paper was discussed for over two hours, and finally resolutions were passed favoring and urging upon the local authorities the adoption of medical inspection of school children. In the evening I delivered my illustrated address upon "The Prevention and Cure of Tuberculosis" to an audience of almost 2,000. This was in the new Methodist church, which is provided with galleries and a large auditorium. The address was well received and a resolution of thanks was given.

Bloomington, May 5 and 20: On these dates I visited Bloomington for the same purpose, namely, to consult with the president and faculty of the Indiana University in regard to the teaching of hygiene. On these dates several questions were discussed, and it was found that some correspondence was necessary in order to finish the conference. Therefore I made my second visit May 20. It was finally decided that the secretary, as professor of hygiene in the medical department of the Indiana University, should use the following schedule in his lectures:

STATE MEDICINE AND HYGIENE.

Synopsis of lectures to be given in the Medical Department of the State University:

State Medicine:

Definition. Necessity for. Scope. Review of Medical Law; of Pharmacy Law; Dental Law; Health Law.

Vital Statistics. Importance, relation and uses to medicine, to the family, to the State; how collected, tabulated and analyzed.

Hygiene and Sanitary Science:

Definition. General consideration. Moses the first hygienist. Air The Soil. Water. Habitations, site, construction, ventilation, lighting, plumbing, houses for the poor, flats, tenements.

Municipal Hygiene:

Sewers. Disposal of sewage; disposal of garbage; street cleaning; street paving; parks; sanitary features of stores; railway stations; street cars; theaters; public halls. Organization and duties of municipal boards of health.

Disease :

Causation. Modes of dissemination and prevention of spinal disease.

Prophylaxis in general against infectious diseases.

The prolongation of life.

Quarantine :

Law and rules governing. General requirements. House quarantine. Peroid. Interstate quarantine.

School Sanitation :

The school site.

The school building.

Lighting, heating, ventilating.

Blackboards, seats, desks.

Wardrobes, cubic space, toilets, sewage disposal.

Fire protection, drinking fountains, lavatories.

Baths, cleaning.

Medical inspection of school children.

Hygiene of Occupation :**Personal Hygiene :**

Care of the person.

Regulation of the diet.

Hygiene of the tissues.

Hygiene of the alimentary tract.

Hygiene of the venereal plagues.

Rest and recreation.

Physical exercise.

Clothing.

Bathing.

Vaccination.

Foods :

Animal foods.

Milk and milk products.

Vegetable foods.

Beverages.

Condiments, spices.

Breads.

Food preservation.

Food adulteration.

Railway Hygiene :

Laws and rules.

Sanitary construction of coaches.

Cleaning of coaches and disinfection.

Transportation of infectious diseases.

Hygiene and sanitary duties and relations of physicians to the State, to their families and to medicine.

Crawfordsville, May 11: Upon arrival I met Dr. W. G. Swank, county health officer, and Dr. R. H. Gerard, city health officer. Together we visited two slaughter houses, inspected several alleys, one cellar and visited two cases of smallpox. The problems and questions in connection therewith were all satisfactorily settled and directions given whereby the difficulties could be removed. Before the high school I delivered an address of forty minutes upon the general subject of the public health and hygiene. The students were requested to ask questions, and twenty minutes were consumed in this way. The questions showed that the students were much interested and desired to know about the work of the State Board of Health.

Franklin, May 13: Upon arrival I met Dr. Province, county health officer; Professor Neal, superintendent, and all the members of the school board. The object of the visit was to make a survey of the high school building and to address the high school students. The schoolhouse was carefully surveyed and said survey was duly reported at the special meeting held May 14, and upon said report proclamation of condemnation was issued. I have since learned that the condemnation was agreeably received and that no opposition appears at Franklin to the erection of a new high school building and the abandoning of the old one.

Pennville, May 16: Condemnation of the schoolhouse at Pennville by the State Board of Health brought forth fierce opposition, and upon petition of the citizens I visited the place to meet with the authorities to see what could be done to further sanitary interests. On arrival I visited the schoolhouse, met the trustee and town board, also a number of citizens. The meeting was held under the shade trees in the schoolhouse grounds, and the matter was thoroughly discussed. I came away thinking that probably most troubles had been overcome, and that the work of securing a new schoolhouse would proceed promptly. In this I was mistaken, for in a few days after my departure the opposition sprang up again. Upon representation of the parties concerned I promised to ask the State Board to extend the date of condemnation to June 1, 1909, because it was physically impossible to build a new schoolhouse of the size necessary by fall. I present at this meeting recommendations that the date of condemnation be extended, provided the local school authorities will place galvanized iron jackets around all the stoves, will remove the shades from the windows, because they are already too small and furnish insufficient light. and also

instruct the teachers to keep constant watch over the children, and whenever they are found sleepy or drooping, to open the windows and give them physical exercises.

Windfall, May 22: The State Board had condemned the schoolhouse at Windfall, and the State Inspection Bureau had required certain fire-escapes and certain changes to be made. The public discussion of the situation was very warm, and accusations were being hurled against the school authorities by certain citizens. Upon this account the school authorities joined with citizens and urged a visit from the Secretary. Upon arrival I made examination of the schoolhouse and conferred with the school board, the health officer, the town board and many citizens. The schoolhouse is badly situated, right in the middle of town. There is very little space around the building, and practically no playgrounds for the school children, who find their way onto the streets and into the stores at intermissions. It was a physical impossibility to construct a new schoolhouse by fall. Therefore I promised to recommend to the State Board the extension of the date of condemnation to June 1, 1909, provided all the stoves would be supplied with galvanized iron jackets, that the teachers be instructed to pay particular attention to ventilation, would watch the children closely, and upon the discovery of sleepiness, or drooping, open the windows and give them gymnastic exercises.

I herewith recommend the extension of the date of condemnation for the reasons named.

Greenfield, May 23: On this date I visited Greenfield to address the Woman's Civic Association upon public hygiene. The lecture room of the Christian church was well filled with women, and my lecture was well received. It resulted in the creation of a committee to visit the public schools and to further, all it could, the medical inspection of school children. The society also considered the subject of social hygiene and the sexual plagues. A lecture was delivered upon this subject by Dr. C. S. Woods, the lecturer of the Indiana Society on Social Hygiene.

Hammond, June 2: On this date I visited Hammond to confer the second time with the Lake Michigan Water Commission. The committees were ready to report. A very successful meeting was held, and the permanent organization was strengthened in several ways. It was finally decided that the governors of Wisconsin, Illinois, Indiana and Michigan should be invited to appoint each two persons to represent their States, and it was also determined to

request the mayors of Milwaukee, Chicago, East Chicago, Gary, Hammond and Michigan City, and the authorities of the towns upon the southern half of the lake, to appoint official representatives. The duty of these representatives would be to study the problems attendant upon the pollution of the lake, and in due time to make such recommendations as their studies might dictate.

Richmond, June 10: On arrival at Richmond I first visited the Eastern Insane Hospital, and made the annual inspection of that institution. The said inspection can be summed up in a very few words by saying, "Found perfect in all respects." I cannot make a single criticism upon the sanitary conditions of Easthaven, and I congratulate the State upon having such an excellent institution, so perfectly conducted. The praise is due Dr. S. E. Smith, the superintendent.

In the afternoon I attended the monthly meeting of the Wayne County Medical Society and gave a talk, reviewing the papers and addresses delivered at the annual meeting of the National Association for the Study and Prevention of Tuberculosis. The talk was well received and thoroughly discussed.

Seymour, June 16: On this date I visited Seymour to attend the Jackson County Medical Society, and to deliver a lecture in the evening upon the subject of "School Hygiene." I did not read any paper before the medical society, but took part in the discussions. A resolution was passed indorsing the work of the State Board of Health and also directing the president to appoint delegates to the International Tuberculosis Congress at Washington. The lecture in the evening was delivered in a public hall, to a large audience, and was well received. A resolution of thanks was passed, and I feel confident that the result of the sanitary survey of the schoolhouse and the address will lead within another year to the erection of a new school building.

French Lick, June 18-19: The annual meeting of the State Medical Society was held at French Lick on the dates herewith named. I attended to meet with the members, to read my annual report upon the progress of hygiene and sanitary science and to do all I possibly could to promote public health among the physicians. Almost three hundred physicians were in attendance. Resolutions were passed requiring the members to appoint delegates to the International Congress on Tuberculosis, and also creating a committee, to be appointed by the members, whose duty it would be to visit the legislature and urge a proper appropriation for the

Tuberculosis Hospital, and also to urge support of the public health work.

Wawasee, June 22: The Indiana Pharmaceutical Society met at Wawasee, and as a circular had been sent forth which in some degree attacked the Pure Food and Drug Law, and announcing that the subject would be discussed at this meeting, I therefore attended. The president, in his address, announced that one of the objects of the organization was that pharmacists might defend themselves against unusual and unwarranted attacks by the law. This, of course, meant that the Pure Food and Drug Law was in some degree oppressive, and that the State Board of Health had been unduly severe in the enforcement of said law. In the course of the meeting the whole matter was thoroughly discussed and finally resolutions were passed sustaining the Pure Food and Drug Law and approving the work of the State Board of Health. It is believed the opposition against the Pure Food and Drug Law by the Indiana Pharmaceutical Association is now a thing of the past.

Pennville Schoolhouse: Upon motion of Dr. Davis, the condemnation date of the schoolhouse at Pennville was extended to June 1, 1909, provided all stoves were supplied with galvanized iron jackets, all windows to be made movable, and the teachers instructed to watch the pupils carefully and whenever drooping or sleepiness were discovered to have the windows raised and give gymnastic exercises; the windows also to be raised and the room flooded with fresh air at all intermissions.

Carried.

Windfall Schoolhouse: Upon motion of Dr. Davis the condemnation date of the schoolhouse at Windfall was extended to June 1, 1909, provided all stoves were supplied with galvanized iron jackets, all windows to be made movable, and the teachers instructed to watch the pupils carefully and whenever drooping or sleepiness were discovered to have the windows raised and give gymnastic exercises; the windows also to be raised and the room flooded with fresh air at all intermissions.

Carried.

Cutler Schoolhouse: Upon motion of Dr. Davis, the condemnation date of the schoolhouse at Cutler was extended to June 1, 1909, provided all stoves were supplied with galvanized iron jackets, all windows to be made movable, and the teachers instructed to watch the pupils carefully and whenever drooping or sleepiness were discovered to have the windows raised and give gymnastic

exercises; the windows also to be raised and the room flooded with fresh air at all intermissions.

Carried.

Milk Conference: Moved by Dr. McCoy that a milk conference be held under the auspices of the board with all producers and dealers in milk and milk products, the same to be held at a date to be fixed by the Secretary after correspondence, and the program also to be arranged by the Secretary.

SCHOOLHOUSE AT BURKET, KOSCIUSKO COUNTY.

The following survey of the schoolhouse at Burket was presented:

Report of sanitary survey of schoolhouse at Burket, Seward Township, Kosciusko County, Indiana.

J. W. Stamats, trustee of Seward Township.

John F. Slife, William Hoffman, George M. Alexander, advisory board Seward Township.

Survey made June 17, 1908, by C. W. Burket, Secretary.

Site.—The school yard covers about one-half acre and is fairly well situated. The ground is gently rolling and the soil is somewhat sandy. Natural drainage is good, water never standing in the yard for any length of time.

Building.—The building is brick, with a stone foundation; no basement, one story, and three rooms.

The stone foundation varies in height from a couple of inches to twenty-four inches. A portion of the roof is of iron, a portion, slate.

In both of the rooms covered with iron there is unmistakable evidence of leakage. Originally this was a one-room building (Baker plan), built in 1883. A short time after, a room 25 by 35 feet was joined to the west side of this building; later on the original first room was divided by putting in a studding partition filled with sawdust to deaden the sound, and at a still later period the end walls of the original first building were removed and an extension of 18 feet built to each end. The walls are cracked where the last two extensions join the original building. Not only are the walls cracked, but the plastering of the ceiling in both rooms at the place where the extensions join the original is cracked entirely across. The vestibule through which the pupils enter two of the rooms is not lighted except by transom. The size of this vestibule is 5 by 7 feet. The pupils enter the intermediate room directly from this vestibule, but the high school and grammar grade pupils must pass through a cloak-room 4 by 7 feet to reach their room. The primary pupils enter their room through a cheaply constructed, unpainted frame vestibule, 5 by 8 feet, in which there are neither windows nor transom. No provision for warming this vestibule.

Primary Room.—This room is entered through a door from the vestibule last described. It is 25x35x14 feet, and contains 48 desks in fair condition. Children's wraps are hung on hooks attached to the north and south walls of room. The floor is worn somewhat, but is still in fair

condition. Light enters by six windows, three on each side. Each window contains eight panes of glass 12 by 18 inches. Total number of square feet of light, 72. Total floor space, 875 square feet, or twelve times as much floor space as light. The blackboards consist of liquid slating painted on the plastering. The room is heated by a stove located twelve feet from the west end of the room, and there are no ventilating shafts.

Intermediate Room.—As before stated, this room is reached by a vestibule. It is 25x36x14 feet, and is lighted by three windows on the east and two on the north. Each window contains eight panes of glass 12x18 inches. Total number square feet of light, 60. Floor space, 900 square feet, or fifteen times as much floor space as light. Children keep wraps in a cloak-room 4 by 7 feet, lighted by means of one window the same size as those already described. There is no closed door between cloak and schoolroom. Liquid slating blackboards are found on the west, south and between the windows on the east side of the room. No ventilating shafts.

High School and Grammar Room.—This room is reached by passing through both a vestibule and cloak-room. The cloak-room is 4 by 7 feet and no door closed between it and schoolroom. The room is 25x35x14 feet, and is lighted by three windows on the east and two on the south. Windows contain eight panes of glass 12 by 18 inches. Total number square feet of light, 60. Total floor space, 875 square feet, or a floor space $14\frac{1}{2}$ times the window space. This room and cloak-room are heated by a stove located in the center of the room. No ventilating shafts.

Enrollment.—The enrollment the past year was: Primary, 34; intermediate, 44; grammar and high school, 21; total, 99. I am told there will be an increase in the enrollment next year.

The outhouses are brick, with surface sewerage, and in fair repair. They are located twenty feet from school building and are within twelve feet of each other, with nothing but an open board fence about five feet in height between them.

Sickness.—Inquiry did not reveal that any epidemic had prevailed among the school children here within the last few years, but a prominent resident physician of Burket stated that children were bothered with weak eyes, colds, lung and catarrhal trouble, and attributed the cause of much of this trouble to the unsanitary condition of the schoolhouse.

Recommendations.—Since this building has no basement, is insufficiently heated by stoves and is without ventilating ducts, the light admitted to each room being less than one-half what it should be, and no provision whatever for heating the vestibules, I recommend that this building be condemned for school purposes.

C. W. BURKET.

Secretary Kosciusko County Board of Health.

I accompanied Dr. Burket when he inspected the Burket schoolhouse, and will say that the above report is true in every particular, and I heartily concur with him in the above recommendation.

EDSON B. SARBEE,

County Superintendent Schools, Kosciusko County.

After consideration of the above survey, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Burket, Seward Township, Kosciusko County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore it is

Ordered, That the said schoolhouse at Burket, Seward Township, Kosciusko County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after July 18, 1908, and if any school trustee, or trustees, any teacher or any person, uses said schoolhouse for school purposes after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health July 10, 1908.

RULES ADOPTED.

The following rules were adopted, being additional rules for the enforcement of the pure food and drug law, and to be additional to Rule 16, under the caption "Sanitary Conditions," page 42 of the record of the minutes of the Indiana State Board of Health of the meeting held March 15, 1907:

FEEDING OF RAW SLAUGHTERHOUSE OFFAL AND DEAD ANIMALS TO HOGS.

Whereas, It is known that hogs fed upon raw slaughterhouse offal and upon dead animals frequently acquire tuberculosis, trichina and other parasitic diseases, thus making their flesh dangerous food; therefore,

It shall be unlawful henceforth to feed the hogs any uncooked slaughterhouse offal, or the uncooked flesh of dead animals.

KEEPING LEMONADE OR OTHER ACID DRINKS IN GALVANIZED IRON RECEPTACLES.

Whereas, It is known that citric and tartaric acids will dissolve zinc; and as these acids are used in the making of acid drinks; and as the citrate and tartrate of zinc are poisonous; therefore,

It shall be unlawful henceforth to use zinc-coated metal containers in the manufacture and for the storage of acid drinks.

SPECIAL MEETING.

SEPTEMBER 7, 1908, 12 m.

Called to close up the affairs of the fiscal year ending September 30, 1908, also to attend and conduct the special conference of state and city health departments with the dairymen of Indiana, the said conference having been duly ordered by the board.

Called to order at 12 m.

Present, Drs. Tucker, McCoy, Davis, Hurty.

The Secretary reported that the attendance on the dairy conference was over 200, all parts of the State being represented. The following program was prepared:

FIRST ANNUAL CONVENTION OF STATE AND CITY HEALTH DEPARTMENTS WITH THE DAIRYMEN OF INDIANA.

At Indianapolis, September 7 and 8, 1908. Under the Auspices of
the Indiana State Board of Health.

To Study Sanitary Milk Production and Distribution; the Application of
the Tuberculin Test to Dairy Cattle, and other Problems of
Vital Interest to the Milk Producer and Consumer.

All Sessions will be Held in the Hall of the House of Representatives,
State House.

PROGRAM

Monday, September 7th.

First Session—10 A. M.

Address

Fred A. Tucker, M. D., President Indiana State Board of Health

Announcements.

Resolutions.

Appointment of Committee.

A Producer's View of Dairy Inspection.....

V. D. Macy, Mooresville, Indiana

The Work of a Milk Inspector from My Standpoint.....

John Owens, State Food and Drug Inspector

Some Methods of Interesting City Officials and Dairymen in Clean

Milk....R. A. Elliott, M. D., City Health Officer, Connersville, Indiana

Second Session—2 P. M.

The Milk Situation in Indianapolis.....

Eugene Buehler, M. D., City Health Officer, Indianapolis, Indiana

The Improvement of the Milk Supply.....

Ivan C. Weld, Special Investigator of the Market Milk Supply. Department of Agriculture, Washington, D. C.

- The Production of Wholesome Milk.....
 H. S. Chamberlain, President Marion County Agricultural Society
- The Control of Tuberculosis Among Dairy Cattle.....
 R. A. Craig, V. M. D., Professor of Veterinary Science, Purdue University.
- The Problem of a Distributing Plant.....
 James T. Polk, President The Polk Sanitary Milk Co., Indianapolis

Tuesday, September 8th.

Third Session—10 A. M.

- Contentions Between the Milk Producer and the Inspector.....
 J. J. Dolan, Amo, Indiana
- The Relation of the State to Sanitary Milk Production.....
 A. W. Bruner, State Food and Drug Inspector
- The Relation of Milk to the Diseases of Children.....
 W. G. Swank, M. D., Secretary Montgomery County Board of Health, Crawfordsville, Indiana.
- The Practical and Impractical Side of the Tuberculin Test.....
 D. F. Lee, M. D., Indianapolis, Indiana
- Successful vs. Unsuccessful Dairying.....
 D. B. Johnson, President State Dairymen's Association

Fourth Session—2 P. M.

- How I Conduct a Sanitary Dairy with Profit.....
 D. F. Maish, Proprietor Clover Leaf Farm, Frankfort, Indiana
- The Improvement of the Milk Supply.....
 H. E. Barnard, State Food and Drug Commissioner
- How to Secure Co-operation Between the Milk Producer and the Consumer....Lee C. Hoover, V. M. D., City Milk Inspector, Richmond, Ind.
- What Inspection Has Done for the Dairies of Terre Haute.....
 C. C. McIntosh, V. M. D., City Milk Inspector, Terre Haute, Ind.

At the opening session the President of the board read a brief address welcoming the delegates and explaining the attitude of the State Board; also entering into a discussion of the infantile death rate in Indiana and its relation to the milk supply.

The Secretary also welcomed the delegates and gave the assurance that the State Board of Health was not for persecution or even prosecution; that it simply desired to help all of the people, all of the time, toward better health, with its attendant wealth and happiness.

Adjourned to meet the following day at 12 m., to complete unfinished business.

ADJOURNED MEETING.

SEPTEMBER 9, 1908, 12 m.

Present, Drs. Tucker, McCoy, Davis and Hurty.

The conference with the dairymen was considered. Mr. Davis congratulated Dr. McCoy for suggesting that the State Board have such a conference.

Dr. Tucker said he thought the conference a great success, and the result would be a marked improvement in the sanitary affairs of dairies.

Dr. Hurty said he was exceedingly pleased with the papers, and especially with the free discussions of those in attendance.

The following resolution, presented by Dr. Davis, and seconded by Dr. McCoy, was passed:

Whereas, A call has been issued to the Indiana State Board of Health to attend a conference of State and Provincial Boards of Health at Washington, D. C., the said conference being September 25, 1908; and,

Whereas, The said conference is for the purpose of considering the administration and execution of pure food laws and matters pertaining to the pollution of streams; therefore, it is

Ordered, That the President, Vice-President and Secretary are appointed as delegates to said conference, and they shall make a report of the proceedings for record, and their expenses shall be paid from the Pure Food and Drug Fund.

SCHOOLHOUSE AT QUINCY, OWEN COUNTY, IND.

The following survey of the schoolhouse at Quincy was presented:

Sanitary survey of schoolhouse at Quincy, Taylor Township, Owen County, Indiana, made August 6, 1908. Joseph Mudd, trustee:

Site.—The site covers about one-fourth acre, and lies between the highway and the Monon railroad. The ground is uneven, ungraded and plainly is deep in mud in wet weather. The site furnishes no playground. This site is wholly unfit for a schoolhouse.

Building.—The building is a two-story frame, old, dilapidated, and stands on stone pillars, with no continuous foundation. No basement. Contains four rooms. Second story is reached by a narrow and steep stairway which is boxed in, is entered by a small door at one end of the struc-

ture, and requires two sharp turns before the upstairs room is entered. All rooms heated by stoves. Ventilation by windows and doors only.

Rooms.—Room 1 is on the first floor. It is 20 by 15 feet, lighted by three narrow windows, each containing eight glass lights 12 by 14 inches. The entire lighting area is therefore 28 square feet. Fifty square feet required; short 22 square feet. Desks old and worn and all of the same size. Ceiling is wood over plaster.

Room 2 is on the first floor, is 24 by 20 feet, lighted by four narrow windows each containing eight glass lights 12 to 14 inches. The entire lighting area is therefore 47.3 square feet. Required area, 80 square feet; shortage, 32.7 square feet. Plastering falling off, ceiling propped up by wooden posts, recently put in. Desks old and worn; floor bad; blackboards good. Ventilation only by windows.

Room 3 is on the second floor. It is a counterpart of Room 1.

Room 4, eighth grade, is on second floor. It is a counterpart of Room 2. Ceiling held up by post recently put in.

Outhouses are dilapidated frame structures; no walks leading to them; nasty and foul and a disgrace.

Well is driven and has an iron pump.

Recommendations.—I recommend that this old, unsanitary, dilapidated schoolhouse be condemned, for the health and lives of the pupils are threatened by the unsanitary features and the same hinder study and progress. The house is a firetrap and this, too, threatens the life of the pupils.

After consideration of the above sanitary survey, the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health, that the schoolhouse at Quincy, Owen County, Indiana, is unsanitary, and consequently threatens the health and life of the pupils, and also interferes with their efficiency, therefore It is

Ordered, That the said schoolhouse at Quincy, Owen County, Indiana, is condemned for school purposes, and shall not be used for said school purposes after September 10, 1908, and if any school trustee, or trustees, any teacher or any person uses said schoolhouse for school purposes, or teaches therein, after the date above mentioned, he or she or they shall be promptly prosecuted as provided in the statutes.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health September 7, 1908.

REGULAR QUARTERLY MEETING OF THE STATE BOARD OF HEALTH.

OCTOBER 8, 1908.

The business of the third calendar quarter, and of the fourth fiscal quarter, was considered.

Called to order at 2 p. m. by Vice-President McCoy.

Present, Drs. Davis, McCoy, Wishard and Hurty.

Minutes of the last regular meeting and of the special meeting of September 7 read and approved, specifically and as a whole.

Secretary's report read and ordered spread of record.

REPORT OF SECRETARY FOR CALENDAR QUARTER ENDING SEPTEMBER 30, 1908.

The affairs of the office have proceeded satisfactorily. The vital statistics have been carefully collected and tabulated, and in this quarter the annual report for 1907 was completed. I beg to be permitted to here make of record the fact that it is only with the utmost difficulty that the present office force, already inadequate for the work of the office, is hardly equal to the additional task of getting out an annual report.

The following visits were made by the Secretary during the quarter and full reports of the same follow:

July 13, South Bend.

July 22, Parker.

July 26, Broad Ripple.

July 27, Anderson.

August 6, Quincy.

August 12, Rockville.

August 14, Rushville.

August 18, Liberty.

August 20, Franklin.

August 23, Winnipeg.

September 10, Crawfordsville.

South Bend: On July 13th I visited South Bend in order to attend the annual meeting of the Tri-State Medical Society, which was to hold a symposium on public health. It was also desired

by the health authorities of South Bend that the State Board of Health advise with them upon sanitary administration. In the symposium referred to the relations of the physicians to vital statistics and to general public health work were presented by myself, and the subject was thoroughly discussed. Finally a resolution was passed to the effect that the Tri-State Medical Society heartily indorses and supports all rational health measures and all reasonable efforts to uplift the public health.

From South Bend I proceeded to Culver, which is situated in Marshall County, on Lake Maxinkuckee. I stopped at this place because of several invitations to examine into the sanitary conditions of the lake and give advice to the people who live there. The authorities of Culver also asked for a visit in order to confer in regard to the drainage of the town. Upon arrival I was met by the health officer, Mr. W. S. Easterday, and with him met the town board. We discussed for some time the subject of sanitation, and then made a general survey of the town, walking through every alley and street. We finally advised the authorities that Prof. R. L. Sackett be employed to make a survey of the town, with the end in view of supplying it with sewers. It was finally agreed by the town board that this would be done.

Parker, July 22: This visit was made in accordance with an invitation from the town school board, who wished the advice of the State Board of Health in regard to the schoolhouses and the sanitary rules for the government of the schools. Upon arrival I met the entire school board, also the chairman of the town board of trustees. The schoolhouses were inspected and found faulty in many respects. It was recommended that the present schoolhouses be remodeled and made to conform to the sanitary requirements as laid down in the rules of the State Board of Health. After thorough discussion pro and con this was agreed to.

Broad Ripple, July 26: This visit was made in the interests of the public health upon demand of two letters from citizens. There has been established a very large swimming pool, which was being patronized daily by thousands of people. This pool is over 500 feet long and 300 feet wide, varying in depth from one inch to nine feet. Our correspondents asserted that the water was not pure and was not changed sufficiently, and that the conditions threatened the health of the people. Thorough inspection was made and many analyses performed. The water with which the pool was filled was found to be pure and excellent in every respect, but the outflow

was found to be highly polluted, as was to be expected. The investigation showed that very probably the pool constituted a menace to the public health, and this opinion was concurred in by Dr. Eugene Buehler, City Sanitarian of Indianapolis. Finally the whole matter was turned over to the city board at its request, for the said board has jurisdiction to within ten miles of the corporation line. Finally the matter was adjusted by requiring a more frequent change of the water and filtration of the outflow of the pool before the same was allowed to flow into the river.

Anderson, July 27: This visit was made in obedience to a summons from the Madison County court. The State Board had condemned the schoolhouse at Markleville, in Madison County, and on this account a suit in court arose. The advisory board refused to make an appropriation so that the trustee could construct a new building, and this officer brought suit, asking for a mandate to compel his advisory board to make an appropriation. I gave my testimony and came away, and it remains to be stated that the county was sued and the new schoolhouse will be built.

Quincy, August 6: This visit was made upon petition of numerous citizens that the State Board of Health make sanitary survey of the schoolhouse at Quincy. This survey has already been presented to the board at the special meeting held September 7, and acted upon. At this writing it is to be recorded that the advisory board has voted an appropriation for the new schoolhouse.

Rockville, August 12: My visit to Rockville was made for the purpose of meeting with the State Tuberculosis Commission, and with them to inspect the grounds recently purchased for the State Tuberculosis Hospital. Upon arrival I found the Tuberculosis Commission in session under a tree on the grounds. We eventually inspected the entire grounds, measured off space for the proposed buildings, and especially discussed the sanitary features and surroundings.

Rushville, August 14: This visit was made to Rushville on account of invitation to deliver an address upon school sanitation before the county teachers' institute; also to make an address upon the work of the State Board of Health before the Rush County Chautauqua. Both addresses were delivered to large audiences, and resolutions of thanks, and also resolutions of encouragement and support to the State Board of Health were passed.

Liberty, August 18: The Union County Teachers' Institute was in session at this date, and I was invited to address the gath-

ering on the subject of "Medical School Inspection." The meeting was held in the court house and the court room was well filled. The field of medical inspection of school children was presented and discussed. A resolution of thanks was passed.

Franklin, August 20: On account of an urgent invitation from the school board of Franklin, I visited that city in order to confer in regard to the new high school building, for which the ground had been purchased. We carefully studied the plans for the new building, with especial interest centered upon the sanitary features. A few changes were recommended and adopted. The fight at Franklin for a new high school building has been long and fierce. Finally the right won, and by the opening of school in the fall of 1909 a new building will be ready.

Winnipeg, August 23: The Winnipeg visit was made for the purpose of attending the thirty-sixth annual meeting of the American Public Health Association. It seemed especially necessary that I should attend, inasmuch as the previous year I had been made chairman of the section on vital statistics. It seems this honor was more on account of the vital statistics law and the work done under it than because of any qualities of a vital statistician possessed by myself. The foreign attendance numbered about 300, and the local attendance fully 100 more. The delegation from Old Mexico numbered 16. At the opening session welcoming speeches were made by the Hon. R. P. Roblin, Premier of the Province, and by "His Worship, the Mayor," Hon. J. H. Ashdown. The three sections, namely, vital statistics, municipal health officers, and scientific, each had programs extending over four days. It is unnecessary here to present the subjects discussed. General sessions were held each morning, following by adjournment to the work of sections. Dr. Cressy Wilbur, vital statistician of the United States Census Bureau, delivered a remarkable paper upon "The Importance of Vital Statistics." He called attention to this point at the close of his address, in the following words:

"Vital statistics is the Cinderella of modern public hygiene. She sits in the chimney corner and sifts the ashes of dusty figures, while her proud sisters, Bacteriology and Municipal Hygiene, go to the ball and talk about the wonderful things they have done. But the Princess' slipper fits no other foot, and when we descend to facts and not mere empty bombast about the results of administrative work, vital statistics are our dependence."

The report of the committee upon ophthalmia neonatorum, by Dr. F. Park Lewis, chairman, was of unusual worth. Five thou-

sands copies were ordered printed and distributed. He shows that 12 per cent. of blindness was caused by this easily preventable disease. He favored holding accouchers and midwives strictly to account if they did not look carefully after the eyes of the new born, for only through such care was it possible to prevent the blindness it produces.

A resolution was passed by the association favoring the creation of a national health department, the said resolution being the same as was passed in the House of Delegates of the American Medical Association at its meeting last June in Chicago. The argument for the establishing of such a department seems unanswerable, yet it is authoritatively stated that the president is opposed to the creation of another cabinet officer. However, Mr. Roosevelt announces that he is heartily in favor of concentrating all the governmental bureaus which relate to health under one department, say the Interior Department, and give a new name. The name proposed is, "Department of Interior and Public Health." This will give the public health interests, which, as we know, overshadow all other interests, representation in the cabinet.

It is with pleasure I call attention to the great demand which has arisen throughout the United States for our circular entitled "Social Hygiene vs. The Sexual Plagues." Twenty thousand of these pamphlets have been published, and every mail brings letters from all parts of the United States, most of them containing stamps, and requesting a copy. The subject is certainly an important one, and much praise is given in the letters received to the Indiana State Board of Health for having taken up the fight. I recommend the publication of 10,000 more of these pamphlets.

In this connection I will say that our disease pamphlets are in great demand, and certainly have done a good work in educating the people of Indiana how to protect their health and successfully fight infectious diseases. Typhoid fever, as shown by the statistics, has decreased 20 per cent., and much of this decrease is certainly due to the education given by this board to the people through these pamphlets. There is also a decrease to be noted in deaths from diphtheria and scarlet fever, and consumption is very slowly decreasing.

STATISTICS.

The birth and death rates for the month composing the quarter were:

<i>July.</i>	<i>August.</i>	<i>September.</i>
Death rate..... 12.2	Death rate..... 12.5	Death rate..... 12.3
Birth rate..... 20.3	Birth rate..... 21.2	Birth rate..... 20.4

The death rate and the birth rate for the quarter were:

Death rate..... 12.3	Birth rate..... 20.6
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SMALLPOX COMPARISON FOR THIRD QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
July, 1907	74	0	21
July, 1908	65	0	13
August, 1907	63	0	18
August, 1908	45	0	7
September, 1907	23	0	7
September, 1908	32	0	8
Total, 1907	160	0	46
Total, 1908	142	0	28

TYPHOID FEVER COMPARISON FOR THIRD QUARTER.

Date.	Number of Cases Reported.	Number of Deaths.	Number of Counties Invaded.
July, 1907	312	53	64
July, 1908	207	58	53
August, 1907	728	131	79
August, 1908	478	81	69
September, 1907	642	133	76
September, 1908	446	118	76
Total, 1907	1682	317	219
Total, 1908	1131	257	198

LETTER REFERRED BY THE GOVERNOR.

The following letter was referred by the Governor to the board:

STATE OF INDIANA.
THE TUBERCULOSIS HOSPITAL COMMISSION.
Room 81, State House.

INDIANAPOLIS, IND., August 27, 1908.

Governor J. Frank Hanly, State House, City:

Dear Governor—The Tuberculosis Hospital Commission would respectfully recommend that the number of persons in the State suffering from tuberculosis of the lungs be ascertained.

Statistics giving the number of incipient, of moderately advanced, and of advanced cases, according to the national classification, would in our

opinion assist the Executive and Legislature in framing a law to assist the unfortunate victims.

The State of Massachusetts, the pioneer and leading State in this good work, in 1906, collected these vital statistics, which are published in Senate Document Number 330.

We believe that Indiana should go a step further and ascertain the number of indigent with pulmonary tuberculosis; also the number of houses infected, for the State must assist the poor and see to it that all contaminated places are disinfected if we are to succeed in this great fight.

Yours truly,

HENRY MOORE, President.

After discussion, the following order was made:

Ordered: The Secretary shall, by letter, inform the Governor that the State Board of Health agrees with the Tuberculosis Hospital Commission that it is most desirable and important that the statistics referred to be collected, and the State Board of Health desires greatly to collect, but it is prevented because of lack of means.

The duties imposed upon the Board of Health by the law are far more than can be performed with the appropriation. To collect the statistics suggested it would be necessary to send a letter of inquiry, with blanks, to every physician in the State, about 6,000 in number. This would cost for postage alone, \$240, for a stamped envelope for return answer should be enclosed. Besides this, the stationery, including blanks, would cost not less than \$50. In addition, it would be necessary to employ a special clerk, because our present office force can only, by the greatest industry, do the regular business of the board. If, therefore, the Governor can supply the means legally, from sum found at his command, he is earnestly requested to do so. The amount required is not less than \$400.

AN IMPROVED EMBALMING FLUID.

The following letter was submitted:

NATIONAL FUNERAL DIRECTORS' ASSOCIATION OF THE UNITED STATES.

OFFICE OF RESEARCH COMMITTEE, P. O. Box 1293,
COLORADO SPRINGS, COL., July, 1908.

To the Secretary State Board of Health, J. N. Hurty, M. D., Ph. D., Indianapolis, Ind.:

Dear Sir—At the conference of State and Provincial Boards of Health, held at Washington, D. C., on May 30, 1907, the embalming fluid known as the National Fluid No. 3, was unanimously indorsed as an approved disinfectant.

This action was taken on the initiative of the Minnesota State Board of Health, based upon the laboratory report of the Minnesota State University, and practical tests of embalmers of national repute.

It is of the utmost importance that uniformity be secured in this respect for the protection of the embalmers, to facilitate interstate transportation of dead bodies and to avoid all possible conflict between the different state health authorities.

To this end the Research Committee of the National Funeral Directors' Association is asking all the state boards of health, which have not already done so, to take similar individual action, and we respectfully request that you will bring the matter before your board and secure the indorsement of said Fluid No. 3 at its next meeting.

Of course, this does not mean that no other fluids shall be indorsed as approved disinfectants, but in conformity with the attitude of the National Conference of State and Provincial Boards of Health, no fluid should be approved without knowledge of the formula, together with the laboratory and practical test statistics, establishing the claims made for it; as was done in the case of the National Fluid No. 3.

The following named state boards of health have already taken such action: Florida, Iowa, Kansas and Minnesota.

In view of the established fact that epidemics have resulted from local interments of unembalmed dead human bodies, owing to a failure to recognize the contagious nature of the disease causing death, is it not of paramount importance that all such bodies, whether for shipment or local interment be disinfected with an approved embalming fluid?

We shall be glad if you will kindly bring this matter, also, to the attention of your board for consideration and such action as their judgment may dictate. Will gladly send you the last proceedings in which our research made its report, if you have mislaid the one sent you by the secretary. (See report on pages from 100 to 112.)

Has your board done any original research work with reference to the germicidal qualities of embalming fluids?

Awaiting the favor of a reply at your early convenience, and thanking you in advance, I am,

Very respectfully yours,

E. EVANS CARRINGTON,

Chairman Research Committee, National Funeral Directors' Assn.

After discussion of the matter it was

Ordered, That the Secretary shall make thorough investigation and report his findings with recommendations at the next regular meeting.

RULES FOR THE ENFORCEMENT OF THE PURE FOOD AND DRUG LAW.

The following rules for the enforcement of the Pure Food and Drug Law were unanimously adopted, singly and as a whole, all conflicting rules being repealed:

RULE 17.—No manufacturer, dealer, vendor or other person shall expose for sale or sell bread, pastry, confectionery, shelled nuts, or other foods so prepared that they are ready for consumption, unless such foods are securely protected from insects, vermin, dust, dirt and other foreign material by suitable coverings of glass, wood or metal.

RULE 18.—Packing houses, canneries and all food-preparing establishments shall be well lighted and ventilated, provided with sanitary water closets separate from rooms in which foods are prepared, and with suitable sanitary washing facilities.

Floors shall be made of cement, or of solid plank so laid that they may be flushed with water at the end of each day. False or loose floors are forbidden unless laid over cement.

No water or waste material shall be allowed to accumulate under or about any factory, canning or packing house, and all drainage shall be efficient and sanitary. All refuse or substances liable to fermentation or decay shall be promptly removed.

The employment is prohibited of persons suffering from cancer, tuberculosis, syphilis, gonorrhoea or any contagious or infectious diseases, or whose hands have sores upon them.

Proprietors of packing houses, canneries and of all food producing establishments shall post notices prohibiting spitting upon floors, and shall require employes to wash their hands after going to the water closet and before returning to work.

The use in food products of saccharin, dulcin, sucrol, garantose, hayden sugar crystals, glucia or any coal tar or other artificial sweetener, is prohibited.

• The use of any antiseptic or preservative substances except salt, salt-peter, sucrose, vinegar and spices, is prohibited; but one-tenth of one per cent. of sodium benzoate may for the packing season of 1908, be used for preserving tomato catsup.

MANAGEMENT OF DAIRIES.

RULE 19.—No building shall be used for stabling cows for dairy purposes which is not properly constructed, well lighted, ventilated, and provided with a suitable, solid floor of plank, cement or other impervious material that can be readily cleaned, and laid with proper grades and channels to carry off all drainage.

No water closet, privy, cesspool, urinal, inhabited room or workshop shall be located within any building, shed or room for stabling cows for dairy purposes, or for the storage of milk or cream; nor shall any fowl, hog, horse, sheep, goat or other animal be kept in any room used for such purpose.

No space in buildings or sheds used for stabling cows shall be less than five hundred (500) cubic feet for each cow and the stables therefor shall not be less than four (4) feet in width.

All rooms and stables in which cows are kept for dairy purposes shall at all times be thoroughly clean and in good repair, and shall be painted or whitewashed at least twice each year.

All manure shall be removed from the room or stable in which cows

are kept for dairy purposes, at least twice each day, and shall not be stored where odors from the same will be noticeable at the stable.

Every person keeping cows for the production of milk for sale shall cause each cow to be cleaned and to be properly fed and watered.

Every person using any premises for keeping cows shall cause the yard in connection therewith to be provided with a proper receptacle for drinking water for such cows, and none but fresh, clean, pure water shall be stored in such receptacle.

Any enclosure in which cows are kept shall be graded and drained so as to keep the surface reasonably dry and to prevent the accumulation of water therein, and no garbage, urine, fecal matter or similar substances shall be placed or allowed to remain in such enclosure, and no open drain shall be allowed to run through it.

Any person keeping cows for dairy purposes shall provide and use a sufficient number of pails, cans, or other receptacles, made of glass, stoneware, glazed metal or No. 9 tin for the reception of storage and delivery of milk, and shall cause all milk, as soon as drawn from the cows, to be removed from the room in which the cows are kept to a separate milk room.

The milk room shall not be used as a living or sleeping room and shall be separate from the barn or stable in which cows are kept. It shall be supplied with pure water and suitable facilities for straining, cooling and storing milk, and washing and sterilizing all utensils and apparatus in which milk is received, stored and delivered.

All cans, measures, bottles and other receptacles of any sort used in the sale or handling of milk shall be scalded with boiling water or live steam daily.

All milk shall be strained through wire cloth strainers and shall be cooled to 50 degrees Fahrenheit, within thirty (30) minutes after it is drawn from the cow. Milk kept for sale shall at all times register on test a temperature not higher than 50 degrees Fahrenheit, and shall be stored in a covered cooler, box or refrigerator.

All milk cans delivered to creameries or dealers in cities shall be covered with airtight lids, and when conveyed in open wagons shall be covered with canvas while being so conveyed, and said canvas shall be cleaned by frequent washing.

Every person engaged in the production, storage, transportation, sale, delivery or distribution of milk, immediately on the occurrence of any case or cases of infectious disease, either in himself or his family, or amongst his employees or their immediate associates, or within the building or premises where milk is stored, sold or distributed, shall notify the local health officer.

No person having an infectious disease, or having recently been in contact with a person having an infectious disease, shall milk or handle cows, measures or other vessels used for milk, intended for sale, until all danger of communicating such disease to other persons shall have passed.

No vessels which have been handled by persons suffering from such an infectious disease shall be used to hold or convey milk until they have been thoroughly sterilized.

No bottle, can or receptacle used for the reception or storage of milk shall be removed from a private house, apartment or tenement wherein a person has an infectious disease.

No person, by himself or by his servant or agent, or as the servant or agent of any other person, firm or corporation, shall exchange or deliver within the State of Indiana, any milk, skimmed milk or cream which contains more than 500,000 bacteria per cubic centimeter, or which has a temperature higher than fifty (50) degrees Fahrenheit.

FEEDING OF RAW SLAUGHTERHOUSE OFFAL AND DEAD ANIMALS TO HOGS.

RULE 20.—Whereas, It is known that hogs fed upon raw slaughterhouse offal and upon dead animals, frequently acquire tuberculosis, trichina and other parasitic diseases, thus making their flesh dangerous as food; therefore,

It shall be unlawful henceforth to feed to hogs any uncooked slaughterhouse offal, or the uncooked flesh of dead animals.

KEEPING LEMONADE OR OTHER ACID DRINKS IN GALVANIZED IRON RECEPTACLES.

RULE 21.—Whereas, It is known that citric and tartaric acids will dissolve zinc; and as these acids are used in the making of acid drinks; and as the citrate and tartrate of zinc are poisonous; therefore,

It shall be unlawful henceforth to use zinc-coated metal containers in the manufacture and for the storage of acid drinks.

RULE 22.—All rules and parts of rules in conflict with rules 17, 18, 19 and 20, as herewith given, are hereby repealed, and said rules 17, 18, 19 and 20 shall be in force from this date, October 8, 1908.

INSPECTION OF SCHOOL AT SPICELAND.

On account of one letter and one telephone message, both requesting that the Board inspect the schoolhouse at Spiceland, and also inquire into whether or not Miss Emma Julian, teacher, had consumption, J. L. Anderson was directed to proceed to Spiceland, make investigation and return report. The report is as follows:

State Board of Health:

Gentlemen—By order of Dr. J. N. Hurty, Secretary, I visited Spiceland, Henry County, Indiana, August 27, 1908, and in company with Dr. H. W. Jones, town health officer, inspected the building used for common school purposes situated upon the Spiceland Academy grounds.

Site.—High and dry, with plenty of shade from forest trees.

Building.—On the northeast corner of the grounds, facing west. Two-story frame, with shingle roof and basement. Good cement and gravel walks lead to the entrance. In 1907 the building was raised three feet on its foundation, a good basement dug, and cement walls and floor put in. Two hot air furnaces and the "Smead System" of water closets were installed and are reported to have worked well. The walls of the building were replastered, new floors put in, a new roof put on and the building painted at that time. Water seeped into the basement last spring, but a new sewer has been put in and the cement floors repaired; and no trouble is looked for from that source this year. There is a force of women at work on the building, washing the desks and woodwork and scrubbing and oiling the floors. The walls are rough finished in plaster and have not

been white coated or painted. Blinds are at all windows. There seemed to be good ventilation in all school rooms.

The windows in the girls' toilet were closed tightly and there was some odor there. That was the only place where any odor was detected in the building. By opening the windows slightly to provide a current of air through the room that would probably be entirely avoided. I consider the building in good condition and that the trustee has complied with the orders of your Board to the best of his ability. I would recommend that the west windows of the two north rooms be kept with blinds down, otherwise there will be cross-lights in both rooms.

In regard to the health of the teacher, Miss Emma Julian, Dr. Jones states that he has known her since girlhood and there is no family history of tuberculosis; that she is suffering from hay fever and asthma, and he has treated her for asthma and colds, but that he did not believe that she was afflicted with phthisis. He is not the family physician. Her brother, Dr. James F. Julian, of Muncie, Ind., is her family physician. Dr. Jones promised to inquire into the case more closely, and if he found evidence to warrant him, would inform the Board.

The trustee was not at home, and I was unable to see him.

The following statement was read and considered and ordered spread of record:

FINANCIAL STATEMENT.

State Board of Health Office—

Appropriation for 1907-8	\$10,000 00
Appropriation for Secretary's salary.....	3,000 00
Appropriation for chief clerk's salary.....	1,500 00
Total	\$14,500 00

Expended, Board of Health.....	\$9,942 13
Secretary's salary	3,000 00
Chief clerk's salary	1,500 00

Total	\$14,442 13
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Balance reverting to general fund.....	\$57 87
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Laboratory of Hygiene--

Appropriation for 1907-8	\$14,000 00
Expended	13,590 17

Balance reverting to general fund.....	\$409 83
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Laboratory Pure Food and Drugs --

Appropriation for 1907-8	\$15,000 00
Expended	14,837 20

Balance reverting to general fund.....	\$162 80
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The total of all funds reverting to general fund, \$630.50.

REPORT

OF THE

State Laboratory of Hygiene

Division of Bacteriology and Pathology

HELENE KNABE, M. D., Acting Superintendent.
ADA SCHWEITZER, M. D., Assistant.
R. S. RISSLER, M. D., Assistant.

SUPERINTENDENT'S REPORT.

To the Indiana State Board of Health:

Gentlemen—I herewith present the Third Annual Report of the Department of Bacteriology and Pathology of the Indiana State Laboratory of Hygiene.

The character and aim of the work of the Bacteriological Department of the State Laboratory of Hygiene is fully explained in the report of 1907, and the report for the present year is made with a view to show how far this department has fulfilled what it promised last year.

The record of analyses shows that 8,087 specimens were examined, and this number is more than twice that of the previous year.

The number of examinations made during the year ending October 31, 1908, is classified as follows:

Sputum	3,136
Diphtheria cultures	2,779
Widal tests	1,270
Pathological tissues	165
Blood examination for Malaria.....	167
Brain of different animals (for Rabies).....	82
Gonorrheal discharge	179
Miscellaneous	310
<hr/>	
Total	8,087

Respectfully submitted,

HELENE KNABE,
Acting Superintendent.

THIRD ANNUAL REPORT OF THE DEPARTMENT OF
BACTERIOLOGY AND PATHOLOGY OF THE
INDIANA STATE LABORATORY
OF HYGIENE.

By HELENE KNABE, Acting Superintendent.

In order to appreciate the progress made in the work of the Bacteriological Division of the Indiana State Laboratory of Hygiene during the year ending October 31, 1908, it is necessary to look back to the time when this laboratory was established. The work was begun October 1, 1905, when the writer of this report was stationed in the private office of the Secretary of the Indiana State Board of Health. The working outfit consisted of a 3x3½-foot table, a microscope kindly loaned for the work by Dr. Hurty, an alcohol lamp and a small quantity of stain, with a few other accessories. Not until three months later was a room set apart for the use of this laboratory, and on January 1, 1906, we moved into our present quarters, Room 122 State House, then amply large, now wholly inadequate for the present work. The first year's work amounted to 2,173 specimens; that of the second year came up to 3,989, and now, at the end of the third year, we are pleased to report a total of 8,087 examinations completed within the past twelve months. This increase in work did not come unsolicited. On page 341 of the report of the Indiana State Board of Health, 1907, are mentioned four ways by which the Bacteriological Laboratory could help in solving the problem of preventing the spread of contagious diseases. The ideas expressed there have been carried into effect during the past year, and the result has been more than satisfactory. Following is a short resume of what has been done in order to bring this laboratory nearer to the people of Indiana and make them realize the benefits which they could gain by patronizing it.

COMMUNICATION BY LETTER, ETC.

Letters were written to the Secretaries of the County Medical Societies and they were requested to bring the contents of these letters to the attention of the members of the respective societies in order to stimulate free discussion of the needs of laboratory work. The letter as written to these societies is here appended:

Dr., Secretary County Medical Society:

Dear Doctor—Enclosed you will find a pamphlet giving information regarding the work done in the Bacteriological and Pathological Division of the State Laboratory of Hygiene. All the work is done free of charge, and a report is given in each case as soon as possible. This laboratory has been in existence for more than two years, and during the past five months we have examined over 2,600 specimens.

Our records show that the physicians of County do not avail themselves of the opportunities offered by the State of Indiana to any material extent, and therefore we urge the members of your Society to permit us to assist them.

All town and county health officers are supposed to keep on hand a supply of our mailing outfits and to distribute them free of charge to any physician asking for them. Where the offices are not easily reached by all physicians, we will be glad to accept suggestions from the County Medical Society, as to the establishment of depots where every member may get his supplies. We will appreciate it greatly if you will at the next regular meeting bring this matter before the Society and let us know of any way in which we may render more service to our professional brethren. Inquiries regarding any special points of our work will be cheerfully answered.

This letter always brought good results, as many requests for outfits and questions regarding our work came very soon, and in this way a correspondence was established with many physicians. This has made the laboratory a general consultant in all doubtful or disputed cases. Careful personal attention has always been given to all specimens, and the letters on file at our office show that the work was justly appreciated by the physicians.

MEETINGS, ETC.

As often as could be done the acting superintendent met the physicians at meetings of medical societies in order to discuss the ways and means by which their respective localities could be benefited and epidemics avoided.

EXAMINATION OF SCHOOL CHILDREN.

Four epidemics of diphtheria have been investigated, occurring in the following communities: Plainfield, Hendricks County, in November, 1907; Bridgeport, Hendricks County, in December, 1907; Ligonier, Noble County, in September, 1908; Mulberry, Clinton County, in October, 1908. The respective reports on these investigations are appended to the special reports each month in

which these epidemics occurred. It has been the custom to give warning to all the physicians of a locality as soon as the first specimen of diphtheria, giving a positive report, which comes from such locality is examined at the laboratory. The physicians were advised to look with suspicion upon every case of faucial or tonsillar inflammation, and outfits for the shipment of infectious material through the mails were immediately sent to them, with the offer of all the assistance that might be needed. In most cases this has been gratefully received, and by a wholesale examination of school children in infected schools we have collected interesting statistics with regard to the amount of infection at the beginning of a school term and after school has been in session five or six weeks.

TUBERCULOSIS.

Out of a total of 3,136 specimens, tubercle bacilli were found in 904, the remainder, consisting of 2,232 specimens, giving a negative result, and next to Marion County, which was represented with 132 specimens, Vanderburgh (40), Grant (36), and Madison (30) counties show the highest numbers. Randolph and Wayne counties were represented with 22 specimens each, all of which contained tubercle bacilli. From all the other counties, with the exception of Brown and Ohio, came specimens of sputum in varying number, but many of them were from non-tubercular cases. Peculiar as it may seem, the largest number of sputum examinations were made during the month of July, 1908, there being a total of 321, with 108 positive results. The fewest analyses of this kind (172) were made in December, 1907.

TYPHOID FEVER.

The number of Widal tests made every month from November 1, 1907, to June 30, 1908, varied between 45 and 77. Only since July did the number exceed 100 per month. In August and September 266 Widal tests were made, with 125 positive results in August and 108 in September. Positive reactions with cultures of paratyphoid bacilli were observed, in August 14 cases, in September only 2.

DIPHThERIA.

Diphtheria has existed to a considerable degree through the months of November and December, 1907, and although the disease was for the most part of moderate severity, yet there occurred many deaths, and laryngeal diphtheria was frequently observed.

The reports of investigations of diphtheria epidemics are appended. One point in the treatment of diphtheria which we encountered frequently and which has a direct bearing on the prevention of epidemics may be mentioned here. When we advise giving antitoxin in every case where diphtheria is either present or exposure to the disease has occurred, we are frequently met with the answer, "It is too expensive; we can not afford to pay for it, and will accept no charity. We would rather take the risk of delay and trust to local antiseptics." There is a certain amount of antitoxin given away by the State through the agency of the county health officers, but this is charity, and not everyone cares to accept it.

HYDROPHOBIA.

This has been the most interesting part of the work this year. There exists now, November, an epidemic of this disease in the State of Indiana which, if the present methods of dealing with it are not soon supplemented by a system of education of the people in general, will probably increase. The first examinations of this disease at this laboratory were made in November, 1905, by the Nelis-Van Gehuchten method, but the result was not satisfactory, although the clinical evidence was much in favor of rabies. The brains were those of a dog and heifer. Since July, 1906, examination by the smear method of Dr. Anna Williams, of New York, has been used. In every case when negri bodies were found in the smears, the inoculated animal succumbed to hydrophobia, and in all cases where the negri bodies could not be found by the smear method, the inoculated animal remained in perfect health.

From December 1, 1906, to October 31, 1907, there were examined 14 brains of different animals, mostly dogs, 12 of which were found to contain negri bodies. During the present year, from November 1, 1907, to October 31, 1908, the number of examinations reached 82. Negri bodies were present in 71 of them, 11 being negative by stain as well as inoculation test. It is impossible to exactly estimate either the number of persons bitten or the number of animals which have died or been killed as a result of the infection. The loss due to rabies has been large, varying in the individual cases. While one dog perhaps bit and killed a few chickens, the victims of another were thoroughbred hounds, valuable horses and cattle. It was impossible to get correct information as to the number of patients who had to resort to Pasteur treatment during the same year. In several instances the number of persons bitten the same day was 7 and 11 respectively.

NOVEMBER, 1909.

Aside from the usual number of sputum analyses and such of other specimens described separately, a special work of this month was an investigation of an outbreak of diphtheria in the public schools of Plainfield, Indiana.

REPORT OF INVESTIGATION AT PLAINFIELD, INDIANA.

By DR. HELENE KNABE, Acting Superintendent.

This investigation was conducted partly at Plainfield and partly at the State Laboratory, where the incubation of cultures and the microscopical examinations were made. The physicians at Plainfield observed the usual number of sore throats during the fall, and all the cases were diagnosed as pharyngitis, tonsillitis, etc. Some of the physicians of Plainfield treated a number of very severe cases of supposed tonsillitis without suspecting diphtheria. On October 20 there were received at the State Laboratory two cultures from Plainfield for microscopical examination, and both showed Klebs-Loeffler bacilli. On inquiry, I learned that one of the patients, Mr. R. L. W., aged 31 years, was an officer of the Indiana School for Boys. Where he had acquired the infection could not be determined with certainty. The other patient, J. S., age 7 years, had a week before he became ill been in the company of a colored boy who had at that time a very sore throat and complained of feeling sick. It is probable that both of these patients were infected from the colored boy, because the latter was working in the force of Mr. R. L. W. Up to this time no cases had been reported from the Plainfield public school which the boy J. S. attended, but within a few days several other children developed diphtheria, and soon the cases increased. Since the Plainfield schools received pupils from the surrounding towns and country districts, the question of preventing the spread of diphtheria to other places had to be considered, and for this purpose it seemed best to meet as many of the physicians as possible whose practice extends near Plainfield, to discuss the situation and warn them of the danger threatening their communities. On Wednesday, November 13, I went to Plainfield to attend a meeting of the Physicians' Protective Association, composed of physicians from Plainfield, Coatesville, Belleville, etc. Nine of the twelve members of this association were present. Dr. Ernest Cooper reported a case of diphtheria occurring in a child three years of age during May, 1907. This case was peculiar in so far as nephritis was the condi-

tion for which relief was sought, the pharyngeal symptoms two weeks before having escaped notice because they caused practically no discomfort. Cultures from the throat of the little patient were examined at that time in the State Laboratory and the diagnosis of diphtheria verified. The time of quarantine in this case was unusually long, because Klebs-Loeffler bacilli were cultivated from the secretions of the nose for more than six weeks. In the discussion of this case, the arguments made by the various physicians clearly demonstrated the wide difference of opinion with regard to virulence, presence of membrane, etc., existing even in the medical profession. Finally all physicians present agreed to send specimens, not only from their patients suspected of having diphtheria, but also from every case which would otherwise be treated as mild pharyngitis or tonsillitis.

The results of this meeting have been most satisfactory. Every one of the physicians present, as well as the other members of the association who were not present at this session, were supplied the next day with diphtheria outfits, many of which were promptly returned to the laboratory with specimens containing Klebs-Loeffler bacilli, proving that the infection was gradually spreading to other localities. As a consequence of this one evening's work many cases of diphtheria which would otherwise have passed unrecognized have since been correctly diagnosed and properly treated, as well as restrained from exposing others to infection. Conditions at Plainfield, however, went from bad to worse. People, in their ignorance, instead of obeying the rules of quarantine, went about their business as usual, openly defying the law, and even permitted children who were known to have diphtheria in mild form to attend the public school. Persons who must have known they were diphtheria carriers would go about with inflamed throats, and only when the symptoms became too severe for endurance would they consult a physician. Most of this wrong action has, no doubt, come from the fact that people do not seem to realize the danger. Physicians are still found adhering to the old idea that diphtheria must always be accompanied by a pseudo-membrane, and that the patient is well and perfectly safe to be at large as soon as the inflammatory symptoms have subsided. To ascertain how such infection was in the public school I went to Plainfield November 25, 1907, taking with me enough material to inoculate cultures from a large number of children. The school building having recently been inspected, I confined myself entirely to an examination of the pupils in all rooms where there had been many absentees on account of

"colds," etc. The four physicians residing in Plainfield, Drs. Cooper, Carter, Ragan and Thomas, whose courtesy I highly appreciate, assisted in this work. In the primary class a cotton swab was inoculated from the throat of the teacher as well as from the throats of the pupils. All children known to have been exposed to diphtheria, were inspected. Many of these acknowledged having been affected with sore throat for several days, some as long as a week. The number of swabs inoculated from pupils of the Plainfield public school November 25, 1907, was 98. Blood serum cultures prepared from these swabs at the State Laboratory were found to give a positive result in 45 cases, 45.9 per cent. The bacteria corresponded morphologically as well as in culture to Klebs-Loeffler bacilli. This result was reported to the health officer at Plainfield and quarantine advised in case of all persons who either have the disease or are known to have been exposed to infection. While some of these persons, especially children, were apparently in fair health, the fact that pure cultures of diphtheria bacilli could be obtained from their throat seemed sufficient to warrant direct measures against their being permitted to mingle with others. An additional 22 cultures were prepared by the local health officer at Plainfield, Dr. Ernest Cooper, from pupils of the Plainfield Academy, and three of them were found positive. The reason for this low percentage can be found in the fact that all the Academy pupils were over 16 years of age and paid more attention to personal hygiene.

While some persons objected to being quarantined, and censured us because of our stringency, nevertheless I believe that when an infection is known to have been so widely disseminated as was the case in Plainfield it is not the time to argue about the question of the virulence of such bacteria, but to adopt radical measures to protect non-immune persons. Although numbers of physicians considered this epidemic as of a very mild type, I could not altogether agree with them, because several very severe cases, with laryngeal involvement, occurred. Many families were probably spared the loss of some of their members by the prompt action of the physicians, who gave large doses of antitoxin to the patient before the disease had progressed too far and insisted upon the immunization of persons known to have been exposed. I was impressed by the fact that so many children were permitted by their parents to go about with tonsils nearly touching the uvula on either side, the enlarged crypts filled with cheesy material, a veritable hotbed for all kinds of bacterial infection. A number of

cases of adenoids were also observed. Taking the Plainfield public schools, which are patronized by a very good class of citizens, as an average, something should certainly be done in the way of regular school inspection, as well as in the education of parents in general. These children, permitted to grow up with their respiratory apparatus in such condition, will not only show more or less of the so-called "adenoid face," but with their disturbed metabolism consequent upon the interference with proper oxygenation of the bloody supply, they will readily fall a prey to tuberculosis, in spite of the fact that many of them live in passably hygienic surroundings. The fact that the severity of post-diphtheritic paralysis is not in proportion to the extent of the symptoms referable to the respiratory tract was well sustained in some cases observed during this epidemic. Through the courtesy of Dr. Carter I was fortunate enough to see a very peculiar case. The patient was a young woman who had suffered several weeks before from a very sore throat. She applied home remedies and the trouble subsided, but she did not feel quite well. November 25, at 1 p. m., the doctor was called in haste, because Miss S. had developed paralysis. We found the patient with slight pharyngitis and a facial paralysis, the right side being affected. The conjunctiva of the right eye was very much inflamed, with existing ptosis and inability to completely close the eye. I suggested the possibility of diphtheritic conjunctivitis, although there was no evidence of membrane formation upon the conjunctiva, the symptoms not having appeared until the forenoon of the same day. We, therefore, inoculated swabs of sterile cotton from the conjunctiva, as well as the pharynx of the patient.

Subsequently the cultures made from the pharynx proved negative, but that from the eye developed a pure culture of Klebs-Loeffler bacilli. A few days later I was able to cultivate the diphtheria bacilli also from the nose. Whether the infection had extended upward through the lachrymal duct or been inoculated directly into the eye is of course a matter of speculation. This case was of peculiar interest, because during October and November we had repeatedly received specimens from cases of diphtheria, as proved by microscopical examination, with a statement from the attending physician that the patient was suffering from intense conjunctivitis, and we had not so far been able to get a culture from the eye of any one of these cases. I am informed that the conjunctivitis in this case was controlled in a reasonably short time, but the paralysis lasted three weeks. There were received at this

laboratory a number of specimens from Plainfield during the month of December, but many of them were for release from quarantine and there seems to have been no marked development of cases in December. The epidemic began some time during the first two weeks of October, and was at its height through the latter part of November, although, as was to be expected, cases have since occurred from time to time in this locality.

NOVEMBER, 1907.

During this month we examined 765 specimens, a larger number than that of any other month since the laboratory was established. The reason for this is to be found in the increase of specimens occasioned by the epidemic of diphtheria.

Sputum—		
Positive	59	
Negative	130	
		189
Diphtheria—		
Positive	267	
Negative	204	
Unsatisfactory	12	
		483
Typhoid—		
Positive	41	
Negative	27	
		68
Urine for tuberculosis—		
Negative	4	
		4
Pus for Tuberculosis—		
Negative	2	
		2
Cystic fluid for Tuberculosis—		
Negative	1	
		1
Urethral discharge for Gonorrhea—		
Positive	3	
Negative	4	
		7

Hydrophobia—	
Positive	1
Negative	0
	<hr/>
	1
Malaria—	
Positive	0
Negative	5
Unsatisfactory	1
	<hr/>
	6
Tissue—	
Adeno Carcinoma	2
Papillary Carcinoma	1
Sarcoma	1
	<hr/>
	4
	<hr/>
Total	765

OUTFITS SENT OUT.

Tuberculosis	232
Diphtheria	282
Typhoid	93
Malaria	56
	<hr/>
Total	663

DECEMBER, 1907.

Bridgeport Report. DR. H. KNABE, Acting Superintendent.

On December 18, 1907, I went to Bridgeport to determine how many children in the public school of this town were infected with diphtheria. The infection was probably brought there from Plainfield, which is only a distance of five miles away, and a number of people go almost daily back and forth between the two places.

Having previously made arrangements with the two physicians of Bridgeport, Drs. Jennings and Yoke, we went to the public school building immediately upon my arrival. This school is usually attended by 60 pupils, but only 27 of them were present, owing to the fear of infection, which prompted many parents to keep their children at home. I explained to the children the reason for our visit, giving them such information about infectious diseases as was suited to their age, and distributed a number of pamphlets treating of diphtheria which the State Board of Health supplies for that purpose. We then inoculated swabs from the throat of each child, to be examined at the State Laboratory. I left

a sufficient number of pamphlets with Mr. Blessing, the superintendent of the school, and also some with the physicians for distribution among their patients. After the work at the school was completed, I visited several families with Drs. Yoke and Jennings, respectively, and inoculated cultures from several patients suffering from pharyngeal and tonsillar inflammation.

The total number of specimens obtained at Bridgeport was 37. The physicians stated there would be no public entertainments at Christmas time, and that they had asked the keepers of groceries and other places where people were in the habit of congregating to have their localities frequently disinfected and permit no loitering.

I was very much interested to hear from Dr. Jennings that he saw a peddler walking into a quarantined house where the card was in full view, in spite of the fact that he was told to keep away and attempts were made to close the door on him.

Of the 37 cultures from Bridgeport which were examined the next day, three contained diphtheria bacilli. They were duly reported and quarantined. The school was closed, it being no near Christmas, and was disinfected before it was opened again. The conditions obtaining in Bridgeport have been the best of any encountered during my service of two years as Deputy Health Officer, and no spread of infection is to be feared in that locality, as the people are willing to observe strict quarantine.

I desire to express my appreciation of the courteous assistance rendered by the superintendent of the Bridgeport public school, Mr. Blessing, his assistant, Miss Kirby, and Drs. Yoke and Jennings.

SPECIMENS EXAMINED.

Sputum—		
Positive	.....	50
Negative	.....	122
		—
		172
Diphtheria—		
Positive	.....	107
Negative	.....	96
Unsatisfactory	.....	22
		—
		225
Typhoid—		
Positive	.....	28
Negative	.....	19
		—
		47

Urine for Tubercle bacilli—		
Positive	1	
Negative	6	
	<hr/>	7
Gonorrhea—		
Positive	5	
Negative	3	
	<hr/>	8
Pus-streptococci—		
Negative	5	
	<hr/>	5
Tissue		10
Hydrophobia—		
Positive	1	
	<hr/>	1
Milk		5
	<hr/>	
Total		480
OUTFITS SENT OUT.		
Sputum	203	
Diphtheria	195	
Typhoid	75	
Malaria	12	
	<hr/>	
Total		483

JANUARY, 1908.

As usual, the number of specimens submitted for examination during January was smaller than that of the previous month, yet there was an increase of 184 specimens over January, 1907. We are gradually gaining ground with the physicians, as well as the laity, and specimens are not infrequently received from the latter even before a physician's advice has been asked.

We received five specimens of milk which came from families who kept one or two cows for their own use and therefore did not come under the rules governing dairies in this State. Though the cows were not sick, the owners thought it better to assure themselves by actual test of the quality of milk. All of the five specimens were potable.

An interesting investigation which was completed this month consisted of the inoculation of a guinea-pig with a small amount of brain substance from a dog dead of rabies. On December 24,

1907, the dog's head was submitted for examination at this laboratory because the dog had suffered from symptoms of rabies. Negri bodies were found in abundance and a positive diagnosis of rabies made, but the diagnosis was doubted because "rabies did not occur in winter." In order to prove that it did occur, a guinea-pig was inoculated with the brain substance and it developed a genuine case of fulminant rabies on the ninth day. While, as a rule, the laboratory animals suffer more from the paralytic form, I have observed the so-called "street rabies" in the case mentioned above, and also in a two-months-old kitten which was inoculated from another case in which the diagnosis was also contested because a veterinary surgeon had made a diagnosis of "distemper" in the case of a dog which subsequently started an epidemic. The heads of two dogs were examined at the laboratory this month and Negri bodies found present in both brains. One of these dogs had been bitten by the other, and the disease was well advanced in both of them when they were killed. The owner of one of the dogs was severely bitten and subsequently lost three valuable horses on account of infection by the same dog.

SPECIMENS EXAMINED.

Sputum—		
Positive	62	
Negative	184	
		<hr/>
		246
Diphtheria—		
Positive	28	
Negative	69	
Unsatisfactory	2	
		<hr/>
		99
Typhoid—		
Positive	33	
Negative	31	
		<hr/>
		64
Malaria—		
Positive	0	
Negative	3	
Unsatisfactory	3	
		<hr/>
		6

Urine for Tuberculosis—		
Positive	0	
Negative	2	
Gonococci—Negative	1	
	<hr/>	3
Feces for Tuberculosis—		
Negative	1	
	<hr/>	1
Pus for Tuberculosis—		
Negative	3	
	<hr/>	3
Pleuritic fluid for Tuberculosis—		
Negative	1	
Positive	2	
	<hr/>	3
Urethral discharge for—		
(Male) Gonococci—Positive	5	
(Female) Negative	2	
(Female) Positive	2	
	<hr/>	9
Tissue—		
Carcinoma	7	
Sarcoma	8	
Other pathological conditions.....	4	
	<hr/>	19
Hydrophobia—		
Positive	2	
	<hr/>	2
Milk		5
	<hr/>	5
Guinea-pigs inoculated—died.....		3
	<hr/>	3
	<hr/>	
Total		463

OUTFITS SENT OUT.

Tuberculosis	278
Diphtheria	168
Typhoid	128
Malaria	44
	<hr/>
Total	618

FEBRUARY, 1908.

This month shows an increase of 64 over the number of examinations made in February, 1907.

From our records we note that during the past month we did not receive a single specimen of sputum from 27 counties. From 18 counties came one each, and 18 other counties were represented by two specimens each. Considering the population of these counties, the percentage of physicians practicing there, the large majority of whom are not doing their own laboratory work, and lastly the prevalence of tuberculosis, it becomes at once apparent that the bacteriological division of the State Laboratory of Hygiene is not sufficiently appreciated by the physicians in those regions. Part of the trouble may arise from the forgetfulness of some health officers who do not keep outfits for the collection of sputum on hand, and as a consequence are unable to supply the physicians when requests are made for such outfits. Complaints of this neglect reach us frequently, and we believe all health officers should be instructed that it is just as much a part of their duty to write to us before they give away the last receptacle as it is to keep supplied with birth and death certificates. Another reason why physicians do not send as many specimens, especially of sputum, as should be expected from the high rate of tuberculosis in their communities, is that many of them are afraid to suggest the microscopical examination of sputum because the patient might suspect that the physician thinks of tuberculosis and employ some one else who is willing to say that the disease is merely a "prolonged cold." The consequences of such proceedings are, of course, always disastrous to the patient, who loses in this way a large amount of time, often so large as to render futile any attempt to arrest the disease, which might otherwise have been crowned with success. While it is true that the earliest signs of tuberculosis appear before the bacilli can be found in the sputum, it is to be remembered that the physician rarely gets these cases until there has been more or less destruction of the lungs, with consequent cough and expectoration continued over a period of weeks or perhaps months. To attempt the cure of such conditions without an effort to ascertain the nature of the expectoration, especially when this service is rendered free of charge, seems to us little short of criminal negligence. We have done as much as possible in the way of reaching the physicians, but have not as yet succeeded entirely.

The number of specimens from supposedly diphtheritic throats, one-half of which were found to contain Klebs-Loeffler bacilli, is

more than twice as large as that of February, 1907. This, of course, does not mean that there is actually more diphtheria in the State, but that physicians have begun to appreciate the assistance of the laboratory in making an early diagnosis.

The state of affairs this month with regard to hydrophobia in Indiana was not at all pleasing. We have examined the heads of five dogs during February, four of which were found to be affected with the disease. These dogs came from various parts of the State, and the loss of life, as well as money, due to rabies will be heavy before it is stamped out. Several deaths from this disease have occurred within the last year, and the loss of valuable horses and other stock has been considerable. We have observed the development of this epidemic since November, 1905, and have advised strict measures against the spread of this disease whenever we have had an opportunity to do so.

SPECIMENS EXAMINED.

Sputum—		
Positive	60	
Negative	148	
	—	208
Typhoid—		
Positive	19	
Negative	26	
	—	45
Diphtheria—		
Positive	45	
Negative	33	
Unsatisfactory	3	
	—	81
Urine for Tuberculosis—		
Positive	1	
Negative	4	
	—	5
Feces for Tuberculosis—		
Positive	1	
Negative	1	
	—	2
Discharge, Suspected Gonorrhea—		
Male:		
Positive	3	
Negative	1	
Female:		
Positive	6	
Negative	1	
	—	11
Pleuritic fluid	1	
	—	1

Pus (abscess)	1	
	<hr/>	1
Malaria—		
Negative	4	
	<hr/>	4
Tissue—Various Pathological	13	
	<hr/>	13
Hydrophobia—		
Positive	4	
Negative	1	
	<hr/>	5
Cream-streptococci	1	
	<hr/>	1
Guinea-pigs inoculated	2	
	<hr/>	2
	<hr/>	
Total		379

OUTFITS SENT OUT.

Tuberculosis	302
Diphtheria	142
Typhoid	96
Malaria	20
	<hr/>
Total	560

MARCH, 1908.

We are pleased to be able to record again an increase in the number of specimens examined this month. The gain over the same month (March) in 1907 is 120. While there were fewer cases of suspected diphtheria than in February, 1908, the number of Widal tests was somewhat larger.

Tuberculosis is, as usual, in the lead, and of the 292 specimens examined only 83 contained tubercle bacilli, which demonstrate that physicians do not wait as long as was formerly the case until they suggest a sputum examination. A large number of physicians, especially those who have neither the facilities nor the time for microscopical examinations, and who heretofore depended mostly upon clinical symptoms, now send specimens from patients suspected of having tuberculosis, and we have on record their words of appreciation of the assistance so generously provided by the State. During this month specimens of sputum arrived from 71 counties, which means that 21 counties, with a total of 735 registered physicians, did not avail themselves of their opportunities. We have written to the county medical societies inviting them to make more use of the laboratory, and these letters have brought

ready responses in many instances. It has been our endeavor to gather specimens of all kinds of cases representative of infectious and parasitic diseases prevalent in Indiana, and we are succeeding fairly well. In one instance we received two specimens of *Ascaris alata* (*A. mystox*), a parasite two or three inches in length, which is commonly found in dogs and cats, but very rarely occur in man. These specimens had been obtained from a boy 9 years old. This child, whose previous health had been good, was seized with severe pain in the epigastric region, and vomiting, expelling one of the parasites. Since then the patient has received treatment to rid him of these worms and is now in good health again. The physician who reported the case stated that he "saw seven cats playing under the cook stove and four more outside the kitchen door, and some of them acted as if they were sick." The parents had not objected to the boy playing with these animals. The fact that domestic animals are often the carriers of infection is lost sight of by most people. We believe that this department should have collections of material illustrating communicable diseases, and we accordingly began work on these lines some time ago, the case reported above being the most unique we have received so far.

SPECIMENS EXAMINED.

Sputum—		
Positive	83	
Negative	209	
	—	292
Typhoid—		
Positive	23	
Negative	38	
	—	61
Diphtheria—		
Positive	17	
Negative	35	
	—	52
Malaria—		
Positive	0	
Negative	11	
	—	11
Urine for Tuberculosis—		
Positive	1	
Negative	10	
	—	11
Feces for Tuberculosis—		
Positive	0	
Negative	1	
	—	1

Stomach Contents, Cancer—	
Positive	2
	<hr/> 2
Catgut, Infected—	
Positive	2
	<hr/> 2
Pus from Tubercular Abscess—	
Positive	4
Negative	1
	<hr/> 5
Hydrophobia (dog's head)—	
Positive	3
	<hr/> 3
Exudates (aspirated)—	
Negative	6
	<hr/> 6
Gonorrheal Discharge—	
Positive	12
	<hr/> 12
Pathological tissue	6
	<hr/> 6
Guinea-pigs inoculated (reacted)	2
	<hr/> 2
Parasites— <i>Ascaris Alata</i> (<i>A. Mystox</i>)	1
	<hr/> 1
Total	<hr/> 467

OUTFITS SENT OUT.

Tuberculosis	385
Diphtheria	282
Typhoid	280
Malaria	86
Total	<hr/> 1,033

APRIL, 1908.

With the exception of November, 1907, this month has brought us more work than any month during the past half year. Since there is no epidemic of either diphtheria or typhoid, this record shows that the demand for the work of this department of the laboratory of hygiene is rising steadily. Especially is this to be noticed in the number of examinations other than for tuberculosis, typhoid fever and diphtheria. The great variety of specimens we have examined this month proves that physicians turn to this laboratory in doubtful cases of all kinds. The following are of special interest:

Pus from a lesion of Actinomycosis in a cow, the ray fungus being easily demonstrable.

Gonorrheal discharge, patient being 20 months of age, female, white. Infection caused by means of a dirty towel.

Brain of two hogs dead of hydrophobia. Some hogs, seven in number, were bitten by a rabid dog on March 22. The dog was killed eighteen days after the injury. Two hogs were found sick and died the same day. The following day, April 11, two more developed the disease, one dying within 24 hours; the other was killed and the brain of both examined. Negri bodies were found in large numbers. Since then three more hogs succumbed to the same disease. The symptoms as manifested by these hogs were the same as seen in other animals inoculated with street virus. They were very vicious in the first stage of the disease and later developed the characteristic paralysis. Glancing back over our records we note that in a period of time extending from March 1, 1907, to April 30, 1908, i. e., within fourteen months, the number of dogs' heads in which an infection of rabies could be demonstrated was 17. A far greater number of heads were submitted for examination, but only those where the infection existed are here mentioned. We are informed that three valuable horses, one mule, several dozen hogs and other live stock were lost as a result of hydrophobia during this time. A number of persons were also bitten, some of them severely.

Since the month of April ends the first half of the fiscal year 1908, a summary of our work during this time as contrasted with that of the corresponding six months of the fiscal year 1907 is appended:

Fiscal Year 1907.

November, 1906, total examinations.....	415
December, 1906, total examinations.....	243
January, 1907, total examinations.....	299
February, 1907, total examinations.....	315
March, 1907, total examinations.....	347
April, 1907, total examinations.....	291
<hr/>	
Total	1,910

Fiscal Year 1908.

November, 1907, total examinations.....	765
December, 1907, total examinations.....	480
January, 1908, total examinations.....	463
February, 1908, total examinations.....	379
March, 1908, total examinations.....	467
April, 1908, total examinations.....	482
<hr/>	
Total	3,086

The foregoing figures speak for themselves.

SPECIMENS EXAMINED.	
Sputum—	
Positive	77
Negative	215
	— 292
Typhoid—	
Positive	17
Negative	34
	— 51
Diphtheria—	
Positive	12
Negative	34
	— 46
Malaria—	
Positive	1
Negative	6
	— 7
Gonorrheal Discharge—	
Male:	
Positive	9
Negative	3
	— 12
Female:	
Positive	10
Negative	4
	— 14
Tissue—	
Urine—Pathological	19
Diazo reaction, positive.....	1
Gonococci, positive	1
Tuberculosis, negative	10
	— 12
Pus—	
Streptococci (abscess), positive.....	6
Tuberculosis gland, positive.....	1
Actinomycosis (cow), positive.....	1
	— 8
Feces (tuberculous), negative.....	5
	— 5
Pleural effusion (tuberculous), negative.....	3
	— 3
Hydrophobia—	
Dog, positive	2
Dog, negative	1
Hogs, positive	2
	— 5

Specimen from tubercular larynx—

Positive	1	
	—	1
Milk (streptococci)	2	
	—	2
Sediment from water cooler (streptococci)	1	
	—	1
Guinea-pigs inoculated	4	
	—	4
Total		482

OUTFITS SENT OUT.

Tuberculosis	481
Typhoid	135
Diphtheria	140
Malaria	59
Total	815

MAY, 1908.

A total of 465 examinations completed this month is, we believe, a good indication that this department has lost none of its popularity among the physicians of the State of Indiana. The majority of specimens (308) consisted, as usual, of sputum, though the number of positives, i. e., such containing tubercle bacilli, was proportionately smaller than ever. This is to be accounted for by the fact that the physicians now as a rule desire to assure themselves of the absence of tubercle bacilli in suspected cases of pulmonary affections, whereas formerly the sputum was examined in order to verify the clinical diagnosis in advanced cases of tuberculosis. Many specimens of sputum came from patients convalescing from pneumonia, where resolution is delayed and the question of incipient tuberculosis must be considered; some also came from persons who have just passed through an attack of typhoid fever, a disease which is often followed by tuberculosis. Occasionally it happens that tubercle bacilli are found in such cases, proving the existence of tubercular foci in the patient's lungs previous to the attack of pneumonia, etc., but in the majority of these cases a clinical diagnosis of the trouble is now made before the infection has progressed too far.

Of the 59 cases of enteric infection whose blood was submitted for Widal test, two were evidently cases of paratyphoid. They gave all the clinical symptoms of severe typhoid fever, but even in

the later stages of the disease the Widal reaction did not occur with the cultures of bacillus typhosis which we employ for this test. We had hoped to be able to conduct as a routine examination the agglutination test with paratyphoid bacilli on all specimens of blood sent to this laboratory, but since we have only two microscopes and work enough to keep them in constant use, we have been compelled to limit this part of the blood analysis to the test with the ordinary strains of bacillus typhosis. The addition of at least one more microscope (preferably two) to the equipment of this laboratory has become an absolute necessity. Having obtained the services of an extra assistant (without pay) we should have a sufficient number of microscopes to enable each assistant to go ahead with his work without having to wait until one of the other two can spare his instrument for a little while. We hope this deficiency will be supplied very soon, as it means not only a great saving of time, but will permit our giving more careful attention to each individual case.

Only 44 specimens of suspected diphtheria were submitted for examination. This number would have been considerably larger if it had been possible for one of our force to go to New Harmony and make a thorough inspection of the school children, as was done in Plainfield in November, 1907. The conditions obtaining in New Harmony at present are similar to those in Plainfield last year, where we found 45 per cent of the children attending a certain school infected with Klebs-Loeffler bacilli. Under the present conditions New Harmony will keep the disease in a mild form during the summer, and in the fall when school convenes cases of virulent diphtheritic infection will appear again.

Of the two dogs' heads submitted for examination during this month only one contained negri bodies. We are informed of several cases of infection with rabies in horses and cattle, but did not get a chance to examine their brains.

SPECIMENS EXAMINED.

Sputum—	
Positive	87
Negative	221
	— 308
Typhoid—	
Positive	21
Negative	38
Doubtful	2
	— 59

Diphtheria—		
Positive	22	
Negative	22	
		44
Malaria—		
Positive	2	
Negative	8	
		10
Gonorrheal Discharge—		
Male:		
Positive	6	
Negative	0	
Female:		
Positive	8	
Negative	2	
		16
Pus (abscess), streptococcus.....	6	
Pathological tissue	12	
Pigeon (throat infection).....	1	
Cebro—spinal fluid	0	
Diplococcus meningitidis	1	
Ascitic fluid, tuberculosis—		
Positive	1	
Feces, tuberculosis—		
Negative	1	
Urine, tuberculosis—		
Negative	1	
Dog's head, hydrophobia—		
Positive	1	
Negative	1	
		2
Milk (cows), streptococci.....	2	
Milk (human), streptococci.....	1	
		3
Total		465

OUTFITS SENT OUT.

Tuberculosis	421
Typhoid	157
Diphtheria	177
Malaria	88
Total	843

JUNE, 1908.

With the exception of November, 1907, more work was completed during the month of June than in any other 30 days of the present fiscal year.

Since there are at present no extensive epidemics, either of diphtheria or typhoid fever, in Indiana, we feel justified in ascribing the increase in work to the fact that the physicians, recognizing the value of the assistance which they receive from this laboratory, make more frequent use of it.

As usual, the largest contingent of specimens (308) consisted of sputum, but the percentage of cases in which tubercle bacilli could be demonstrated (82) was very small.

Specimens of diphtheria come in occasionally, those of the past month numbering only 38. On incubation 24 of them developed Klebs-Loeffler bacilli.

Of blood specimens to be tested for Widal reaction we received 77, a good agglutination occurring in 23 cases. Many of these specimens were submitted in order to differentiate between typhoid fever and septic conditions, appendicitis, etc., hence the large percentage of negative reactions.

The number of blood smears sent to this laboratory for a diagnosis of malaria was larger than ever (25, as against 11 in previous months), but unfortunately the physicians, before preparing the specimens, had given large doses of quinine to the patient, with the result that the parasites disappeared from the peripheral circulation. Another mistake commonly made, even if no quinine were given, is to prepare the specimens after a chill, when the spores are very small and have not had time to enter the red corpuscles. If the films are prepared shortly before the paroxysm is due, the result is very satisfactory, because the parasites are large, practically filling the corpuscles. Considerable difficulty in the examination of these specimens is caused through carelessness in the preparation of the blood films. Many physicians who are not familiar with our methods, instead of first reading carefully the directions which are supplied with each outfit, simply abstract a drop of blood from the patient's finger, transfer it to a slide or cover glass, and then dry it without spreading or dropping another cover glass over it, thus making the specimen entirely unfit for staining purposes. A great deal of annoyance is also caused by the failure of physicians to properly fill out the record cards. Sometimes they even send the specimens without any data regarding the case. When cards are forwarded to the doctor with the request to return them properly filled out, this is either entirely forgotten or weeks may elapse before the request is complied with. This lack of attention to business methods on the part of the physicians makes it almost impossible for us to keep accurate records. Often specimens come to us

without a sufficient amount of postage, and we are compelled to pay the extra postage or return the package to the sender. We believe that while the examinations are being made free of charge, the patient from whom the specimen comes and who derives the benefit from this work should at least pay full postage.

The heads of nine dogs and one cat suspected of having rabies were submitted for diagnosis. Negri bodies were found in the brain of the cat and eight dogs, only one proving negative. This animal had shown no symptoms of the disease, and was only killed because it had bitten a child who had probably teased it. We advised keeping the dog under observation for a few days, but to no avail. The owner of the dog was threatened with prosecution by the parents of the child who was bitten, and he reluctantly permitted the killing of a fine dog, a procedure which could have been avoided if they had kept the dog muzzled. A number of persons and several head of live stock were bitten by the rabid animals, and some stray dogs, which were also bitten, were allowed at large, certain to transmit the disease to others. Three of these rabid dogs' heads were sent from New Augusta, three from Indianapolis and one each from Lewis Creek and Mooresville. The cat's head was sent from Plainfield. We know of a number of other cases, clinically undoubtedly rabies, but did not receive the specimens. In many instances the animals are killed and buried without a thought of their being rabid, and when, later, suspicion is aroused, the tissue is too much decomposed to be of value.

Following is a detailed report of the number and variety of specimens examined :

Sputum—		
Positive	82	
Negative	226	
	—	308
Diphtheria—		
Positive	24	
Negative	14	
	—	38
Typhoid—		
Positive	23	
Negative	54	
	—	77
Malaria—		
Positive	0	
Negative	23	
Unsatisfactory	2	
	—	25

Urethral Discharge—**Male:**

Positive	4
Negative	3

Female:

Positive	10
Negative	5

— 22

Discharge from infant's eyes (gonorrhea)—

Positive	2
Negative	0

— 2

Pue (abscess) 5

— 5

Feces, suspected tuberculosis—

Positive	0
Negative	5

— 5

Stomach contents 1

— 1

Urine, tuberculosis—

Positive	0
Negative	12

— 12

Pleuritic fluid, tuberculosis—

Negative	1
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— 1

Milk (human), streptococci 1

— 1

Hydrophobia (dog's head)—

Positive	8
Negative	1

— 9

Hydrophobia (cat's head)—

Positive	1
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— 1

Total 522

OUTFITS SENT OUT.

Tuberculosis 443

Diphtheria 116

Typhoid 139

Malaria 45

Total 743

JULY, 1908.

Although the month of July is not, as a rule, considered to be very prolific in the production of coughs and colds, the number of sputum examinations was higher than that of any month before. The specimens came from nearly every county in the State. The unusually dry weather causing many cases of dust infection may have been responsible for this increase.

The number of Widal tests, while it reached 132, was not suggestive of any extensive epidemic of typhoid fever, only 45 of these examinations giving a positive result, most of them coming from different localities. This, of course, is not a fair index to the actual condition with regard to typhoid infection in this State. There are mild epidemics which are either very late or not at all recognized as typhoid fever. Again, in the more severe cases, where the clinical diagnosis is easily made, physicians do not always take the trouble of having their diagnosis confirmed by the laboratory. There was an epidemic of typhoid fever in Wayne County, but it was easily controlled by the local authorities and no special assistance was requested.

The number of specimens of pathological tissue examined during July is 26, representing a large amount of very tedious work, which after all does not benefit public health, because cases of malignant or nonmalignant growth have no influence on the general health of the community in which they occur.

A gradual increase has been noted in the number of specimens of gonorrheal discharge which are submitted for examination. Prior to November, 1907, we did not receive many specimens of this class.

SPECIMENS EXAMINED.

Sputum—		
Positive	108	
Negative	211	
Doubtful	2	
	—	321
Typhoid—		
Positive	45	
Negative	74	
Atypical	13	
	—	132
Diphtheria—		
Positive	7	
Negative	12	
	—	19
Pathological tissue	26	

Stomach contents, for cancer—	
Negative	2
Milk—	
Human, streptococci	3
Cow, good	1
	— 4
Pleuritic, etc., exudate—	
T. B. positive.....	1
T. B. negative.....	5
	— 6
Purulent discharge, abscess, etc.—	
T. B. positive.....	2
T. B. negative.....	7
	— 9
Gonorrheal discharge—	
Male:	
Positive	1
Negative	2
Female:	
Positive	14
Negative	5
Positive (eye)	1
	— 23
Feces, T. B. negative.....	6
Urine, T. B. negative.....	11
Malaria—	
Negative	15
Unsatisfactory	4
	— 19
Total	478

OUTFITS SENT OUT.

Tuberculosis	662
Typhoid	180
Diphtheria	53
Malaria	86
Total	981

AUGUST, 1908.

Again we have to record an increase in the work of this department. The number of sputum examinations was about the same as usual, but a little change is to be noted with regard to the Widal tests. Their number has nearly been doubled, while the percentage of positive reaction is considerably higher. In July a little over 34 per cent gave positive results, while our records for August show that 48 per cent of the specimens came from patients ill with

genuine typhoid fever. Of the remaining 52 per cent, 14 specimens gave a positive reaction with paratyphoid bacilli, and 38 specimens examined gave atypical reaction. These latter cases may have been typhoid fever, but the reaction was either not well developed at the time when the blood was collected or a complication interfered with or partially obstructed the agglutinating power of the blood.

The outlook regarding the spread of diphtheria during the coming fall and winter season is very grave indeed. In 17 out of 33 cases examined, nearly pure cultures of Klebs-Loeffler bacilli were obtained, and this high a percentage, to be found as early as in August, is indicative of a coming epidemic of diphtheria which will be very severe as well as widely spread. In every case where diphtheria bacilli are found I am warning the physicians of the locality where the case occurred to take special precautions in order to hinder the spread of the infection and get it well under control before the schools begin their regular sessions. If this is not done, and few will heed the warning, the loss of life due to diphtheria will be very heavy during the coming winter.

Special attention should be directed to the spread of rabies in Indiana. Out of a total of 14 dogs submitted for examination, I found the infection present in 12 of these animals. Many persons have been bitten, much valuable stock has been lost, and the end of this epidemic of rabies will not come for months and perhaps not for years. There are still dogs which carry within them the virus of this infection. Even if all the animals which are known to have been bitten by a rabid dog after it has developed any symptoms are all killed, there will be some of them left over which the dog may have injured before it showed any signs of illness. The fact that the saliva of the animal is infectious for several days before symptoms of rabies show itself is of prime importance in the spread of this infection. The number of specimens examined for rabies includes also the brain of one cow, and as this was a very interesting case which I had the opportunity to personally observe, it will here be reported in detail, as follows: On July 29, 1908, a stray dog was killed in West Indianapolis after tearing off half of the right ear of Mr. Willoughby's cow. The head of this dog was submitted for examination and found to contain large numbers of negri bodies. In order to determine the length of time of incubation I advised Mr. Willoughby to keep the cow about a month longer, as by that time the disease would have developed, the wound being on the head of the cow and very severe. Nothing was heard from the case until August 29, 1908. The cow had been in good condition as

usual until on the date mentioned she was very nervous when in the morning Mr. Willoughby took her out of the stall. She did not drink, and bellowed continually all through the forenoon. I saw her at 11 a. m. She was very irritable and did not permit anyone to come near her. This change in temper was about the most noticeable feature of the case, as the animal had always been very gentle, permitting even children to come near her and pet her. At 2 p. m. I saw her again, and very little change in symptoms was noticeable except that she was perhaps slightly more irritable. She had taken neither food nor water, and it was decided to take her from the commons, where she had been tethered all day, back to the stable in order to avoid accident if she should become very wild. August 30, at 4 p. m., the animal died, having suffered dreadfully all day. She had been so wild that no one cared to go into the barn where she was placed, she having broken through an inclosure of heavy board. She had jumped about and tried to scale the walls, bellowing incessantly. Shortly before 4 p. m. Mr. Willoughby, who had watched her through a crevice in the wall, said the animal made one more bound and with a last terrible roar fell over dead. I removed the brain within an hour after the animal had died, and the smears were stained during the next hour, this brain being the freshest I have had occasion to examine in two years of work with this class of specimens. The number of negri bodies which this brain contained was astounding, nearly every cell being invaded by them. All sizes and shapes could be studied in these specimens, from the small, highly refractive, pear-shaped body to the large ameboid, beautifully nucleated forms. This case of rabies was interesting also in another way. The milk from this cow was fed to pigs up to the day when the disease developed in the cow. None of these pigs has shown any symptoms of disease, proving that the infection cannot be transmitted through the milk.

A detailed report of number and kinds of specimens examined during this month follows:

Sputum—

Positive	80
Negative	184
	— 264

Widal reaction—

Positive	125
Negative	83
Atypical	38
Paratyphoid, positive.....	14
	— 260

SEPTEMBER, 1908.

Total number of examinations, 1,355. This is the largest number of examinations completed during any thirty-day period since the establishment of this laboratory. While there were about as many samples of sputum and blood specimens for Widal tests as usual, a great increase in the number of serum cultures is noticeable. This increase occurred in consequence of an investigation which I made during September in order to determine the extent of diphtheritic infection in the public schools at Ligonier, Indiana. The extent of this work and the results obtained are reported separately.

The number of specimens from cases of suspected malaria shows also a considerable increase. Only two of the 33 specimens contained plasmodium malariae, and both of these cases probably contracted the disease outside of Indiana. The remainder of these blood smears (31) came partly from cases of continued fever, where the physicians did not make a diagnosis of typhoid fever, partly from cases of anemia with an irregular temperature. This latter class of cases has usually proved to be intestinal toxemia, and upon careful investigation I learned that there was nothing except occasional chills to suggest the possibility of malarial infection. Usually in cases of this kind the physicians ask for a differential count of the leucocytes, a kind of work which we have neither the right nor the time to do, but since the printed rules governing the work of this laboratory do not contain anything in regard to this part of the work, the physicians are often disappointed when they are informed that there is a difference in the scope of the work of a laboratory of hygiene and a private laboratory.

Only one sample of urine was submitted for a Diazo reaction; another sample was found to contain tubercle bacilli. The remaining 16 specimens of urine were in all probability from cases of nephritis, judging from the histories which accompanied them, but we did not examine them for any constituents except tubercle bacilli and gonococci.

Rabies was represented with 12 specimens, 11 of which contained negri bodies. Five of these specimens were dogs' heads, but in one case negri bodies were not found. The history of this case was also fairly conclusive of a different disease. The heads of four cats, two hogs and one calf were also submitted for examination, all of them having been affected with rabies. The calf, as well as the hogs, came from the farm of Mr. E. E. Kaler, New Augusta,

Indiana, who sustained a heavy loss of stock in addition to being bitten by one of the animals. This is the fourth occasion in two years of which we have the records where the loss of animals on a single farm was so great. As a rule there are several animals bitten in a community, but this loss is usually distributed among three or four farms. The history of the epidemic of rabies on Mr. Kaler's farm is as follows:

A stray dog, fox terrier, was in the farmyard one night during the first week in August, killing 21 chickens. It was not at the time known that any other animals had been bitten. On August 29 a large mother hog was found dead, but the owner did not think of rabies, having forgotten about the incident of three weeks ago. September 1 Mr. Kaler was bitten by a small pig which seemed to be sick, dying shortly after, but still no suspicion as to the nature of the trouble was aroused. When, however, two days later another pig from the same litter developed symptoms of a fulminant case of rabies, while a third pig was affected with the paralytic form of the disease, the thought occurred to him that these cases might be rabies. Accordingly he brought the heads of both pigs to the laboratory and a diagnosis of rabies in either case was soon made. Mr. Kaler was advised to take Pasteur treatment. As time progressed more animals died, among them the heifer. At the end of 20 days (from August 29 to September 18) the following animals had succumbed to rabies: Two mother hogs; two shoats, weighing 110 and 125 pounds respectively; five pigs six weeks old; one heifer six months old.

After all, this is but a very small part of the actual loss due to rabies within the last year.

The other specimens examined this month, including 12 cases of tumor, are of no importance as far as the public health is concerned:

Sputum, tuberculosis—

Positive	82
Negative	202
	<hr/> 284

Typhoid Fever, Widal reaction—

Positive	108
Negative	101
Atypical	55
Paratyphoid, positive	2
	<hr/> 266

Diphtheria cultures—		
Positive	128	
Negative	396	
Doubtful	66	
No growth	4	
	<hr/>	694
Pathological tissue		12
Blood, malaria—		
Positive	2	
Negative	31	
	<hr/>	33
Urine for tuberculosis—		
Positive	1	
Negative	16	
	<hr/>	17
Urine, Diazo reaction, positive.....		1
Gonorrheal discharge—		
Male:		
Positive	5	
Negative	2	
Doubtful	1	
Female:		
Positive	5	
Negative	4	
Doubtful	1	
	<hr/>	18
Pus abscess for T. B.—		
Positive	0	
Negative	8	
	<hr/>	8
Pleuritic fluid for T. B.—		
Positive	1	
Negative	1	
	<hr/>	2
Rabies—		
Dog's head, positive	4	
Dog's head, negative	1	
Cat's head, positive	4	
Hog's head, positive	2	
Calf's head, positive	1	
	<hr/>	12
Water. B. typhosus, negative.....		1
Milk—		
Cow's, bad	3	
Condensed, sterile	1	
	<hr/>	4

Stomach contents, carcinoma, negative.....	1
Feces, tuberculosis, negative	1
Tapeworm segments	1
<hr/>	
Total	1,355

OUTFITS SENT OUT.

Tuberculosis	436
Typhoid	354
Diphtheria	675
Malaria	82
<hr/>	
Total	1,547

REPORT OF AN INVESTIGATION TO DETERMINE THE EXISTENCE
OF DIPHTHERIA INFECTION AT LIGONIER, IND., SEPTEMBER
3-7, 1908.

By DR. HELENE KNABE, Acting Superintendent.

The first specimen of this epidemic was received at the laboratory, coming from Ligonier, sent by Dr. Fred R. Clapp, August 4, 1908. It gave an abundant growth of Klebs-Loeffler bacilli, and the report was telegraphed at once. The Doctor was also supplied with outfits for the collection of this class of specimens and advised to confer with the other physicians regarding ways and means to check the spread of this infection, and any assistance which could be given by the laboratory was offered. Three weeks later Dr. Clapp sent several other specimens from suspected cases, and again Klebs-Loeffler bacilli were found. In consequence of this I wrote to the Doctor, believing him to be the health officer, that it would be advisable to examine a little more into the conditions existing in Ligonier, especially since the public schools were about to begin sessions, and if necessary I could come to Ligonier and assist in the examination of the school children, many of whom would doubtless carry the infection into the school. On September 2 I received a telegram from Dr. Clapp reading, "Yes, come at once; wire when you will arrive."

Arriving on the morning of September 4, I immediately went to see Dr. Clapp. Learning that Dr. E. L. Schlotterback was the health officer, I at once communicated with him, and after a careful consideration of the existing circumstances we went to work. While Dr. Schlotterback kindly made arrangements for a meeting with the trustees of the Ligonier public schools and Prof. W. C. Palmer, I went to call on the physicians and invite their co-operation. Friday, September 4, at 8:30 p. m. I met the following gentlemen at

the office of Mr. Green: Messrs. Green, Nelson, Hutchison and Jeanette, all members of the board of school trustees, Prof. W. C. Palmer, superintendent of public schools, and Drs. W. F. Black, Fred R. Clapp, E. L. Schlotterback and Charles Woodruff, of Ligonier, Ind. The mayor of Ligonier and Dr. Shobe, who had been duly invited, were absent because of urgent business. In discussing the situation I explained the importance of loss of time as a factor in the spread of diphtheria, recalling the epidemic of this disease as it existed in Plainfield, Ind., during November, 1907, when nearly 45 per cent of the children were found to harbor in their mouths the Klebs-Loeffler bacilli. Inasmuch as the patient whose case we had diagnosed August 5 had died of post-diphtheritic paralysis, there was reason to believe that the infection present in Ligonier was of a type more severe than that which made so much trouble at Plainfield. My suggestion to examine every child who would present itself at school the following Monday and prepare a culture from each throat was unanimously accepted, the physicians kindly offering to assist in this work. We also discussed the question of "Medical inspection of schools as a routine," and the board of trustees expressed themselves as very much in favor of such inspection, the details of this work to be attended to later when the result of the first inspection should be known. September 5, in company with the trustees and Professor Palmer, I inspected the school buildings of Ligonier. The larger one of these two buildings, while not of the newest construction, was well ventilated and clean, provided with fire system, toilets and good heating apparatus. It is a three-story building, and as it has a good fire-escape can be emptied in seven minutes. All the disadvantages of the older methods of construction have been ingeniously overcome as far as that is at all possible. About 250 children are taught in this building. The smaller schoolhouse is of the newest construction and well kept. It holds about 150 children. The new library building, which is now in course of construction, was also shown me. In my opinion the citizens of Ligonier are to be congratulated upon the excellent men who are in charge of matters of education in this city. On Monday, September 7, at 8:30 a. m., assisted by Drs. F. W. Black, Fred R. Clapp and E. L. Schlotterback, I began the work of inspecting the children who had presented themselves at school, this being the first day of the fall session. Sterilized wooden tongue depressors and cotton swabs were used. A specimen was prepared from the pharynx of each child. The swab, having been applied to the walls of the pharynx and the peritonsillar re-

cesses of the child, was immediately enclosed in a sterile test tube, sealed with a sterile cotton plug and numbered. The name, age, sex and address of the child were recorded on cards brought from the laboratory for that purpose, and these cards were numbered each in the same way as the swabs. The teacher of each class also added the numbers of the pupils to their names in her register. This system of recording was used because it always saved much time, as it permitted us to report the results obtained from the examination of the swabs by number instead of the name. This work was first done in the smaller one of the schools, 113 cultures being prepared. We then went to the large school and finished the inspection of the children in all the grades, reserving the inspection of the high school pupils for the afternoon. This completed, I left Ligonier at 5 p. m. the same day in order to complete the rest of this investigation at the Laboratory of Hygiene. The rest of the cultures were prepared in this way. It was agreed that school should be dismissed for the rest of the week and the children cautioned not to congregate or visit each other during that time in order to prohibit the spread of infection. The result as obtained by microscopical examination of the entire number of cultures is as follows:

Positive—pure cultures	33
Doubtful—few bacilli resembling certain forms of the Klebs-Loeffler bacilli.....	68
Negative	336
	<hr/>
	437

From the pupils whose cultures were considered doubtful and also from 24 of those who were on the "positive" list, cultures were again submitted by Dr. E. L. Schlotterback for examination the following week, the children having meanwhile received careful local treatment of nose and throat. Of 92 cultures received September 18, 11 still gave positive results, 78 were negative and on 3 of them no growth appeared.

Total number of examinations:

Positive	44
Doubtful (few bacilli).....	68
Negative	414
No growth	3
	<hr/>
	529

All children have been properly attended by physicians and quarantine imposed in each case where diphtheria bacilli were found.

A word in regard to the condition of the oral cavities of the children may be added here. According to the estimate of Drs. Clapp and Black, as well as myself, there are from 40 to 45 per cent of the pupils who were sorely in need of attention, notwithstanding the fact that the majority of them come from good homes and their parents could well afford to give them the treatment needed. There are many cases of adenoids, more even of hypertrophied tonsils, and the teeth as well as the gums are often in bad condition. Surely a campaign of education of parents is indicated in Indiana.

November 1, 1908, the reports from Ligonier are very favorable. New cases of diphtheria have not developed, a good indication that the permanent inspection of schools which is now in effect at Ligonier is proving its worth. The assistance of the citizens of Ligonier, without which this work would not have been so entirely successful, is to be praised very highly.

OCTOBER, 1908.

Total number of examinations, 1,471. We have to record an increase of 116 specimens over the number of last month.

Diphtheria stood the highest, with 965 cultures, Clinton County alone being credited with 305 specimens. There was an epidemic of the disease in Mulberry, Ind., and going out there to investigate the existing conditions, brought cultures home with me. The work done in this investigation and the results of the same are included in a special report. Next highest is Benton County, with its epidemic at Earl Park and vicinity. A number of cultures sent from Earl Park by different physicians did not give corresponding results, although many of these cultures were alleged to have been taken the same day and within a short time of each other. Another very annoying feature was that so many swabs arrived in a condition which made it appear very doubtful that they had ever been touched to anyone's pharynx. The number of these unsatisfactory swabs became so large that we refused to give them any consideration whatever in our records, and advised the physicians to see that their patients did not use an antiseptic for several hours before they expected to take a culture. The warning helped, as very

little trouble occurred after that time and the swabs received gave good results.

The difference in attitude of the citizens of Ligonier, who assisted the work of stamping out an epidemic, and of the citizens of Earl Park, who were said to resist the same with all their power, is very striking indeed. Marion County was represented with 123 specimens from suspected cases of diphtheria, 45 of which gave a positive result.

Tuberculosis was represented with 252 specimens, about the usual rate per month, while the number of Widal reactions was 140, barely half that of either August or September. There were 28 blood smears to be examined with regard to the presence of plasmodium malariae, all proving negative. The examination of 20 pathological specimens was completed and many more are in preparation. Of the various other kinds of specimens examined, the heads of 7 dogs examined for rabies are of interest. Five of these animals had suffered from this disease, a number of persons having been bitten.

SPECIMENS EXAMINED.

Sputum, tuberculosis—		
Positive	74	
Negative	178	
	—	252
Typhoid—Widal reaction—		
Positive	91	
Negative	28	
Atypical	21	
	—	140
Diphtheria—		
Positive	451	
Negative	496	
No growth	18	
	—	965
Malaria, negative		28
Pathological tissue		20
Urine, T. B.—		
Positive	3	
Negative	11	
Urine, Diazo reaction—		
Positive	1	
	—	15
Urethral discharge—		
Male, positive	5	
Female, positive	5	
Male, negative	1	
Female, negative	3	
	—	14

Feces, T. B., positive.....	2	
Feces, T. B., negative.....	6	
	<hr/>	8
Pus, T. B., positive	1	
Pus, T. B., negative	6	
Pus, B. pyocyaneus, positive	1	
	<hr/>	8
Dog's head, rabies, positive	5	
Dog's head, rabies, negative	2	
	<hr/>	7
Milk (human), good	2	
Milk (human), infected	1	
Milk, cow's, infected.....	2	
	<hr/>	5
Bile, B. typhosus, negative.....	1	
Scrapings from chancre, spirocheta pallida, negative	1	
Serum, cerebro-spinal meningitis, positive.....	1	
Serum, T. B. meningitis, positive	2	
Serum, T. B. meningitis, negative	2	
	<hr/>	5
Guinea-pigs injected, died	1	
Guinea-pigs injected, no reaction	1	
	<hr/>	2
		<hr/>
		1,471

OUTFITS SENT OUT.

Tuberculosis	446
Typhoid	284
Diphtheria	727
Malaria	78
	<hr/>
	1,535

REPORT OF THE INVESTIGATION OF AN EPIDEMIC OF DIPH-
THERIA AT MULBERRY, IND., OCTOBER 14-17, 1908.

By Dr. HELENE KNABE, Acting Superintendent.

Upon information given by the health officer of Clinton County, Dr. Benson Ruddell, regarding the existence of diphtheria in Mulberry, Ind., Dr. Hurty directed me to make an investigation. Accordingly I went to Mulberry on the evening of October 14. On my arrival there, I learned the following: Several weeks previous, the 20th of August, Mr. Ohl, the owner of a grocery store, had complained of sore throat. He did not consult a physician at the time, but contented himself with the use of home remedies. About a week later he went to Chicago, on the 27th day of August, and while there he became so much worse that he hastened back home on August 28. Dr. Kent was called and found Mr. Ohl suffering from

what was clinically tonsillitis, there being no evidence of membrane anywhere in nose or throat. He prescribed the usual remedies and ordered rest in bed. The following day a small patch of membrane appeared in the throat and the doctor changed his diagnosis to diphtheria, giving a large quantity of antitoxin. There was a temporary improvement, but death occurred from cardiac paralysis on the 31st day of August. Dr. Kent did all that could be done to prohibit further spread of the disease after he had become convinced that he was dealing with diphtheria. A short time after, Dr. Kent's little daughter returned from the Mulberry public school with symptoms of diphtheria. As the doctor is in possession of a good microscope, and is perfectly able to make his own laboratory diagnosis, he did so in this case, and finding that Klebs-Loeffer bacilli were present, he injected a large dose of antitoxin. He also found that his little son became infected with the same disease and governed his treatment accordingly. Dr. Kent stated that he felt absolutely certain that the children had not acquired the infection through him, as he had changed his clothing every time he had visited Mr. Ohl, and disinfected himself thoroughly before going to his home. About September 15, Fern Wattenbarger, 6 years old, fell ill with throat trouble. Dr. Bonham, who attended her, said that he did not think her disease was contagious. She recovered sufficiently to be able to attend public school for a few days again, when she suddenly became ill on Friday, the 4th of October, dying of cardiac paralysis on Monday, October 12. Her little brother was sick at that time, having been unable to speak above a whisper since October 11. The boy died October 13, of what was evidently laryngeal diphtheria. No microscopical examination was made in the case of Fern Wattenbarger, but we received a specimen from the boy's throat sent by Dr. Benson Ruddell, the county health officer. The specimen showed a pure culture of diphtheritic bacilli, the swab having been touched directly to the membrane. On speaking to Drs. Earhart, Yundt and Koons, I learned that the two last named of the physicians had treated a number of cases of "pseudo-membranous tonsillitis" during the summer. Dr. Earhart had attended one case of diphtheria, which received a full dose of antitoxin and was properly quarantined. Dr. Bonham stated that he had treated many cases of tonsillitis, but believed that he had done all he could in case of the Wattenbarger children. On October 15 I examined the throats of the school children in the same way as stated in the report on the investigation of the epidemic in

Ligonier. Dr. Ruddell, of Frankfort, Ind., and the physicians of Mulberry assisted. The number of cultures prepared was 289.

These cultures came partly from pupils of the Mulberry public school, partly from the high school, and 21 cultures were prepared from scholars of the academy which is located a short distance from the town. This epidemic has existed in Mulberry for at least several months, and I found families—for instance, the Howe family—whose members had been affected with the infection one after another. From what I could determine it is very probable that one of the Howe children brought the infection into the public school. I saw many of the children from farms near Mulberry who had suffered from mild diphtheria for weeks, but were told by their respective physicians that it was not contagious. Most of these cases had been diagnosed “pseudo-membranous tonsillitis.” There were also a number of severe cases of throat infection among the adults, mostly men, and they probably were caused by the circumstance that Mr. Wattenbarger, the father of the deceased children, who was himself infected with diphtheria, is a barber, and in plying his trade had probably spread the infection. He was not aware of the trouble he was causing, for his physician, Dr. Bonham, was reported to have told him, as well as others, that “the disease was not contagious.” Conditions as I found them were grave enough, but as there did not seem to be a great amount of opposition among the better classes of people, and the school authorities were willing to do all in their power to help in combating the infection, I anticipate no serious trouble for the winter. There will, of course, be the usual criticism of the ignorant, but it will amount to very little in comparison with the good that will come out of this investigation. Dr. Kent had on hand 36,000 units of antitoxin when I left Mulberry, and several of the other physicians had placed orders for the same with their druggist, so that it seemed reasonable to suppose every case of any severity would be given the proper treatment. The public schools and academy were closed for an indefinite time and all public gatherings postponed.

My highest appreciation is due Miss Imo Van Dalen, a teacher in the Mulberry public schools. Her services, which were so graciously rendered, have done very much to aid in the smooth and satisfactory progress of my work, and the community of Mulberry may be justly proud of her.

REPORT
OF
The Chemical Department
LABORATORY OF HYGIENE

Year Ending September 30, 1908

H. E. BARNARD, B. SC.,
Chemist in Charge and State Food and Drug Commissioner.

H. E. BISHOP, B. SC.,
Food Chemist.

I. L. MILLER, B. A.,
Drug Chemist.

J. H. BREWSTER,
Water Chemist.

WM. D. McABEE,
Ass't Chemist.

JACK HINMAN,
Ass't Chemist.

THIRD ANNUAL REPORT OF THE CHEMICAL DEPARTMENT OF THE LABORATORY OF HYGIENE.

H. E. BARNARD, B. SC.

During the past year the scope of the work of the Chemical Department of the State Laboratory of Hygiene has been greatly extended. Two additional rooms have been secured for the use of the Water Laboratory, which made possible the separation of the Food and Drug Laboratories, so that now the three departments are in separate rooms, each supplied with all the apparatus necessary for its work.

H. E. Bishop and I. L. Miller have continued their work as heads of the Food and Drug Laboratories, although both have received flattering offers of positions in other laboratories engaged in food and drug control at decidedly increased salaries. The Water Laboratory has been placed in charge of J. Herbert Brewster, formerly chemist to the Pittsburg Water Works and Guarantee Company, of Pittsburg, Pa., and under his direction has proved to be of much value to the water companies of the State.

Four inspectors have been kept in the field during the entire year and have succeeded very largely in correcting the abuses which existed prior to the passage of the Pure Food and Drug Law. As the work is continued, the necessity for analytical examination of food products grows less, because the percentage of adulterated articles is constantly decreasing. A very careful laboratory control is essential, however, as there is always a class of manufacturers and dealers, limited in extent, which practices adulteration and mislabeling.

On March 1 last that portion of the pure drug law relating to the labeling of drugs with their alcoholic and narcotic strength went into effect, and made necessary a great deal of work in putting old stocks of goods in shape for sale. This was accomplished very successfully, and the work met the hearty approval of the drug trade.

Special study has been made during the past summer of the canning industry of the State, a report of which is elsewhere given.

Sanitary inspection and supervision is essential to pure food work, and if carried out by trained and competent inspectors is of decided benefit to the manufacturer and to retail trade, as well as to the consumer. The present laws cover many existing conditions, but should be extended further until every food product is so made and distributed that it is pure and wholesome.

A conference of the municipal and private owned water plants of Indiana with the State Board of Health, was held at Indianapolis July 8 and 9 for the purpose of studying the sources of water supplies in Indiana, their preservation and purification, and to establish standard and uniform methods of analysis. The conference was largely attended by superintendents of municipal and private water supplies, and secured for the laboratory the support of water companies in its work of controlling the character of the public supplies of the State. Much has been done along this line during the past year, but as the work goes on the necessity for further legislation becomes apparent if intelligent and efficient work is to be done for the advance of sanitary science.

RESULTS OF ANALYSES OF FOOD SAMPLES.

During the year 2,037 samples of food products purchased from stock by inspectors and sent in for examination by health officers, dealers or customers, have been analyzed. Of this number 1,733 samples have been found to be pure and properly labeled and 304 either adulterated or misbranded. This is equivalent to a percentage of adulteration of 14.9. In 1906 the percentage of adulteration was 42.3, in 1907 20.8. The record of last year's work shows, therefore, a decided improvement in the general character of food stuffs sold in the State. The improvement in the quality of the goods and the uniformly honest labeling may largely be attributed to the passage of state and federal pure food laws. While before these laws were passed dealers were just as honest as at present, they had little opportunity to learn of the true character of the products they were handling, and had in many instances resorted to morally unfair and dishonest methods to meet cheap competition. The consuming public was indifferent as to the character of its food, and looked to price rather than to quality.

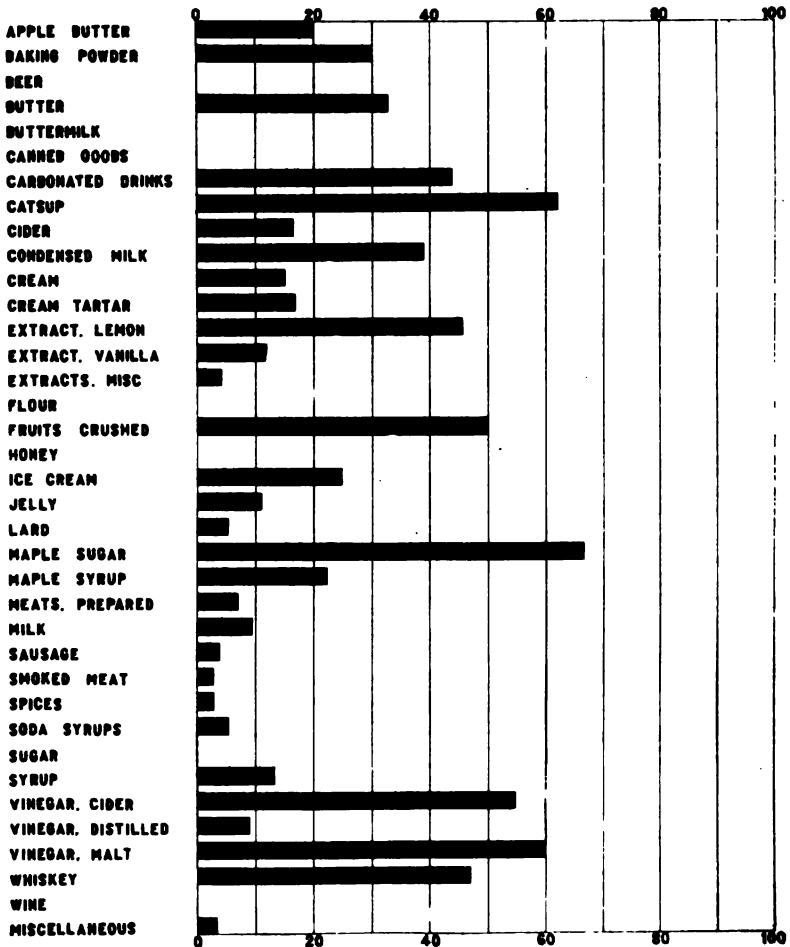
The following summary gives in full the character of the work done and the results:

RESULTS OF ANALYSIS OF FOOD SAMPLES.

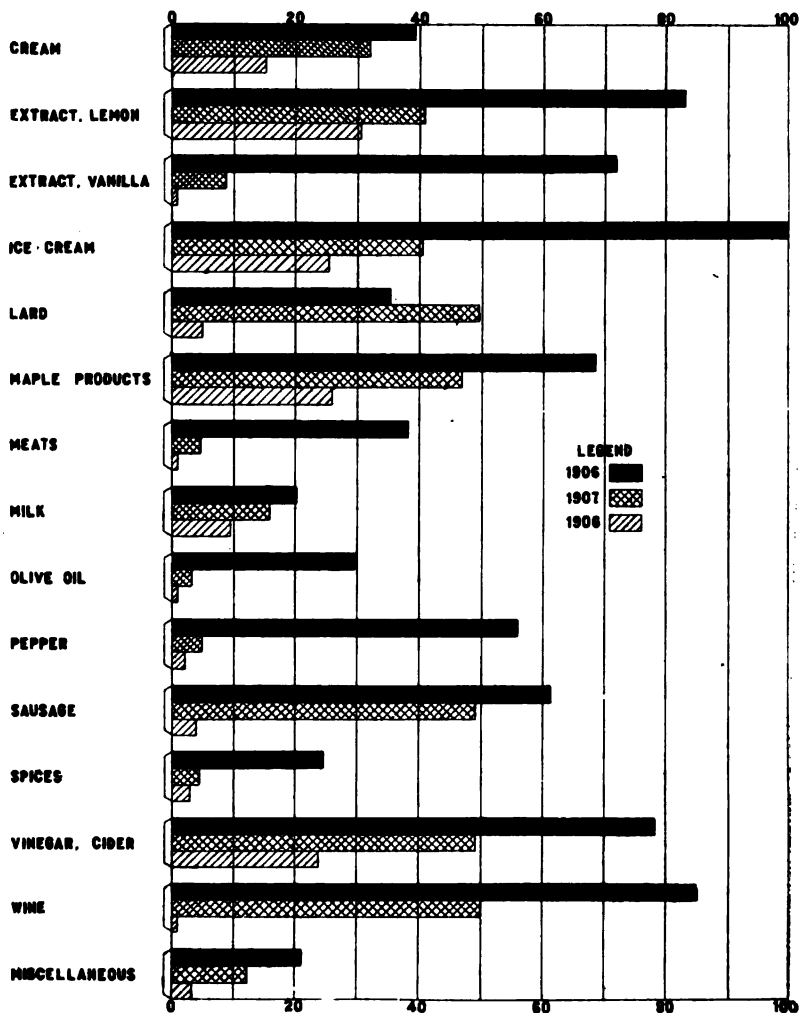
Articles Examined.	Good.	Bad.	Total.	Per Cent. of Adul- teration.
Allepice.....	39	4	43	9.3
Baking Powder.....	7	3	10	30.0
Beer.....	62	0	62	0.0
Butter.....	60	29	89	32.6
Butter, Apple.....	4	1	5	20.0
Buttermilk.....	7	0	7	0.0
Canned goods.....	9	0	9	0.0
Carbonated drinks.....	9	7	16	43.7
Soda syrups.....	17	1	18	5.5
Crushed fruits.....	4	4	8	60.0
Catsup.....	3	5	8	62.5
Cider.....	5	1	6	16.6
Cinnamon.....	57	1	58	1.7
Cloves.....	15	0	15	0.0
Condensed milk.....	14	9	23	3.4
Cream.....	39	7	46	15.2
Cream tartar.....	29	6	35	17.1
Extracts, lemon.....	13	11	24	45.8
Extracts, vanilla.....	22	3	25	12.0
Extracts, miscellaneous.....	8	7	15	4.6
Flour.....	15	0	15	0.0
Ginger.....	16	0	16	0.0
Hamburger.....	17	2	19	10.5
Honey.....	12	0	12	0.0
Ice-cream.....	66	25	94	25.5
Jelly.....	8	1	9	11.1
Lard.....	85	5	90	5.5
Maple syrup.....	31	9	40	22.5
Maple sugar.....	2	4	6	66.6
Miscellaneous meats.....	9	0	9	0.0
Milk.....	614	67	681	9.8
Mustard.....	12	0	12	0.0
Pepper.....	88	2	90	2.2
Sausage.....	118	5	123	4.06
Smoked meats.....	34	1	35	2.8
Syrups.....	13	2	15	13.3
Sugars.....	5	0	5	0.0
Vinegar.....	56	67	123	54.4
Vinegar, distilled.....	22	2	24	8.3
Vinegar, malt.....	2	3	5	60.0
Whisky.....	9	8	17	47.0
Wine.....	17	0	17	0.0
Miscellaneous.....	56	2	58	3.5
Total.....	1,733	304	2,037	14.9

PERCENTAGE OF ADULTERATION OF FOODS IN INDIANA

1908



DECREASE OF ADULTERATION OF FOODS IN INDIANA



PROSECUTIONS.

It has not been the policy of the department to prosecute dealers in food and drug products who have violated the law unwittingly. Every endeavor has been made to familiarize the trade with the provisions of the law and to keep it informed of the action of the department by frequent notices in the daily press and by circular letters to the interested parties.

During the eleven months ending September 30, 1908, 212 prosecutions were brought for violation of the Pure Food and Drug Law. Of this number the defendant was convicted in 200 cases and fines amounting to \$2,246 assessed. In six cases the defendant was adjudged by the court to be "not guilty." One case was quashed at the request of the State, and another was dismissed because the defendant plead guilty on a similar charge brought at the same time. Many of the cases brought during the year were for unsanitary conditions. In all cases proprietors of unsanitary slaughter houses were found guilty and fined. Nineteen dairymen were fined for maintaining unsanitary dairies or selling dirty milk. Cases have been brought under almost every section of the Pure Food and Drug Law, and the reasonableness and constitutionality of the law has been time and again upheld by the courts.

Ever since the Pure Food Law went into effect cases brought in the courts have been endangered and occasionally lost on the ground taken by the attorneys for the defense that the proprietor is not responsible for the acts of his clerks. The department has always contended that the law should not be so construed, and a decision of the Supreme Court handed down October 14 settles conclusively the argument.

A judgment convicting Nathan C. Groff of selling oleomargarine for dairy butter at the market in Indianapolis, in violation of the Pure Food Law, was affirmed, although the sale was made by his clerk when he was not there. Judge Hadley said:

"The question for decision is, can a principal be held criminally liable for the sale by a clerk or agent of adulterated food, the sale being made in the absence of the principal and in violation of his instructions?

"The general rule is that criminal statutes must be strictly construed to avoid the creation of penalties by construction, but such reasonable view must be taken of the statute as will effectuate the manifest intent and purpose of the lawmakers. It is too obvious for discussion that the pure food statute was enacted as a means of protecting the people against the fraud and imposition of manufacturers and venders of inferior and unwholesome food and medicinal products. In the first place, the offense created by the statute belongs to that class in which knowledge or guilty interest is imma-

terial and need not be shown in order to justify a conviction. It falls under the rule that where statutes declare that the doing of a certain thing shall constitute an offense against the public, without reference to whether done without notice or with guilty knowledge, it is the act itself, not the intent, that determines the guilt, the actual harm to the public being the same in one case as in the other. The distribution of impure or adulterated food for consumption is an act perilous to human health, hence a dangerous act, and cannot be made innocent and harmless by the want of knowledge or good faith of the sellers. Guilty intent is not an ingredient in a crime, as we have seen; hence the rule that governs in that class of offenses which rests upon criminal intent has no application here. Cases like this are founded largely upon the principle that he who voluntarily deals in perilous articles must be cautioned how he deals. The sale of oleomargarine in an adulterated form or as substitute for butter is a crime against public health. Whoever, therefore, engages in its sale, or in the sale of any article interdicted by law, does so at his peril, and impliedly undertakes to conduct it with whatever degree of care is necessary to secure compliance with the law. He may conduct the business himself or by clerks or agents, but if he chooses the latter the duty is imposed upon him to see to it that those he selects to sell the article to the public obey the law in the matter of selling; otherwise, he, as a responsible proprietor of the business, is liable for the penalty imposed by the statute. We do not believe it was the legislative intent that such proprietor should escape by showing that an unlawful sale made by his clerk was unauthorized. Appellant is the proprietor of a stall in the Indianapolis Market House; among many other food products he keeps for sale oleomargarine and creamery butter, but not dairy butter. April, 1907, one Bruner, an inspector in the employ of the State Board of Health, presented himself at the appellant's stall and applied for the purchase of one pound of dairy butter. Appellant was not present. The stall was in sole charge of a young lady, a clerk and employee of appellant, who answered Bruner's application by moving a short distance, and then by stooping took from under the counter a package, which she wrapped and handed to Bruner, and for which she charged and received 25 cents. The package was wrapped in a paper that had stamped upon it in large letters the word 'Oleomargarine,' but which word was not observed by Mr. Bruner until the day of the trial of this case. Appellant had previously given instructions to the young lady to sell everything in the stall for just what it was, and to sell nothing as a substitute for something else. These facts show that that sale was made by a clerk who was employed by appellant to sell oleomargarine along with butter and other things. The sale was made in the regular course of business, in the exercise of the usual duties of her employment, made for appellant upon his apparent authority and for his benefit, and it seems clear that he should be answerable if he had failed to apply the necessary precaution in the selection, counseling and oversight of his agent, or in other words, held responsible for what he had done by another.

"While the adjudications are not in harmony as indicated by the above text, we think the better reason and weight of authority is to the effect that when the element of guilty knowledge and intent are eliminated from an offense and a doing of the act *by any person* is interdicted, the principal

should be held to answer for the delinquency of his agent while the latter is engaged in performing the usual duties of the agency.

"When we take into consideration the community of interest of the proprietor and clerk in a case like this, and that private instructions to a clerk may be given in such a way that there may be more meaning in the manner than in the words spoken, and adding thereto the fact that the modern method of ordering supplies by wire renders the identification of the seller generally impossible, we are led to the conclusion that to sustain appellant's contention (that only the clerk is liable) would operate as a virtual overthrow of the statute."

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW FOOD AND DRUG LAW FROM NOVEMBER 1, 1907, TO SEPTEMBER 30, 1908.

COUNTY.	Lab. No.	Name and Address of Defendant.	Illegal Sale of	Information Filed.	Date of Trial.	Final Disposition of Case.
Clinton		Frank A. Aughe, Frankfort.	Dirty milk.	Oct. 3, 1907	Oct. 14, 1907	Settled, \$10 and costs.
Clinton		W. H. Meador, Frankfort.	Dirty milk.	Oct. 3, 1907	Oct. 15, 1907	Settled, \$10 and costs.
Clinton	8243	W. A. Huffine & Son, Kirklint.	Lard.	Oct. 3, 1907	Oct. 6, 1907	Settled, \$10 and costs.
Floyd	9077	Geo. Case, New Albany.	Milk.	Oct. 1, 1907	Oct. 7, 1907	Settled, \$10 and costs.
Greene		Wm. Ritter, Bloomfield.	Dirty milk.	Oct. 23, 1907	Oct. 23, 1907	Settled, \$10 and costs.
Henry's		Mansfield & Shields, New Castle.	Milk.	Oct. 17, 1907	Oct. 17, 1907	Settled, \$10 and costs.
Miami's		Frank Jackson, Peru.	Milk rooms.	Oct. 31, 1907	Oct. 31, 1907	Settled, \$10 and costs.
Sullivan		Frank Jackson, Peru.	Orange cider.	Oct. 22, 1907	Oct. 22, 1907	Settled, \$10 and costs.
Sullivan		H. E. Dutton, Sullivan.	Maple syrup.	Aug. 14, 1907	Oct. 22, 1907	Settled, \$10 and costs.
Sullivan		Roed & Barry, Sullivan.	Spirits of camphor.	Aug. 15, 1907	Oct. 22, 1907	Settled, \$10 and costs.
Tippacano	8269	Lawrence Neady, Dayton.	Cream tartar.	June 21, 1907	Oct. 4, 1907	Settled, \$10 and costs.
Tippacano	8755	Dayton & Co., Lafayette.	Lebanese.	Aug. 2, 1907	Oct. 4, 1907	Settled, \$10 and costs.
Tippacano		Samuel N. Jackson, Lafayette.	Milk.	Oct. 8, 1907	Oct. 9, 1907	Settled, \$10 and costs.
Tippacano		Nicholas Gilliam, Lafayette.	Milk.	Oct. 2, 1907	Oct. 9, 1907	Settled, \$10 and costs.
Tippacano		Nicholas S. Riebers, Lafayette.	Milk.	Oct. 10, 1907	Oct. 10, 1907	Settled, \$10 and costs.
Tippacano		Joseph an Dams, Lafayette.	Dirty milk.	Oct. 30, 1907	Oct. 31, 1907	Settled, \$10 and costs.
Tippacano		John Stell, Lafayette.	Dirty milk.	Oct. 30, 1907	Oct. 31, 1907	Settled, \$10 and costs.
Tippacano		James Lucas, West Lafayette.	Milk.	Oct. 2, 1907	Oct. 2, 1907	Settled, \$10 and costs.
Tippacano		Nicholas Gilliam, Lafayette.	Butter exposed.	Oct. 8, 1907	Oct. 8, 1907	Settled, \$10 and costs.
Tippacano		Wm. E. Burke, Lafayette.	Meat.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Tippacano		Herman Strodel, Ft. Wayne.	Meat.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Allen's	9676	M. G. Schwalen, Ft. Wayne.	White wax.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Hancock		D. W. Regess, Martinsville.	Lemon flavor.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Morgan		James R. Layman, Spencer.	Extract vanilla.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Rush	7281	J. A. Craig, Rushville.	Vinegar.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Rush	7278	Court House Grocery, Rushville.	Vinegar.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
Rush	7297	J. A. Craig, Rushville.	Alspice.	Nov. 26, 1907	Nov. 26, 1907	Settled, \$10 and costs.
White's		J. Carr, Monticello.	Milk.	Nov. 22, 1907	Nov. 22, 1907	Settled, \$10 and costs.
Clay		James Zarafontes, Brazil.	Ice cream.	Nov. 1, 1907	Nov. 1, 1907	Not guilty.
Clay	10479	Schawwecker & Son, Clay City.	Vinegar.	Nov. 1, 1907	Nov. 1, 1907	Not guilty.
Clay	10515	Martin Jensen, Clay City.	Vinegar.	Dec. 12, 1907	Dec. 12, 1907	Settled, \$10 and costs.
Clay		Martin Jensen, Clay City.	Vinegar.	Dec. 16, 1907	Dec. 16, 1907	Settled, \$10 and costs.
Clay		C. A. Stogges, Cary.	Spirits of camphor.	Dec. 16, 1907	Dec. 16, 1907	Settled, \$10 and costs.
Floyd	10668	P. C. Brown, New Albany.	Milk.	Dec. 4, 1907	Dec. 5, 1907	Settled, \$10 and costs.

! Meat slaughtered under unsanitary conditions.

2 Unsanitary conditions.

3 Meat uncovered in transportation.

4 Meat kept in unsanitary condition.

5 Contained dirt.

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COUNTY.	Lab. No.	Name and Address of Defendant.	Illegal Sale of	Information Filed.	Date of Trial.	Final Disposition of Case.
Hancock	9868	V. L. Early, Greenfield.	White wax.	Oct. 31, 1907	Nov. 7, 1907	Settled, \$10 and costs.
Hancock	9894	C. W. Schmidt, Greenfield.	Pork sausage.	Oct. 31, 1907	Nov. 7, 1907	Settled, \$10 and costs.
Hancock	9895	E. F. Thayer, Greenfield.	Pork sausage.	Oct. 31, 1907	Nov. 7, 1907	Settled, \$10 and costs.
Howard	10381	Melkes & Rule, Kokomo.	Cream.	Nov. 23, 1907	Nov. 24, 1907	Settled, \$10 and costs.
Madison	10172	Lee's Drug Store, Anderson.	Lime water.	Nov. 1, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Madison	10176	A. Zwiemel, Anderson.	Sausage.	Nov. 1, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Madison	10190	Jesse Stafford, Anderson.	Milk.	Nov. 1, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Marion		Pottis Dry Goods Co., Indianapolis.	Candies exposed.	Dec. 19, 1907	Dec. 20, 1907	Settled, \$10 and costs.
Marion		Otto C. Beck, 346 Indiana Ave., Indianapolis.	Candies exposed.	Dec. 27, 1907	Dec. 27, 1907	Settled, \$10 and costs.
Marion		Wesley J. Laughner, 140 N. Illinois St., Indianapolis.	Candies exposed.	Dec. 27, 1907	Dec. 27, 1907	Settled, \$10 and costs.
Montgomery		Court House Grocery.	Candies exposed.	Dec. 21, 1907	Dec. 21, 1907	Settled, \$10 and costs.
Morgan		Ben Lewis, Martinsville.	Unsanitary grocery store.	Nov. 27, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Montgomery		Mr. Sloan, Crawfordville.	Meats exposed.	Dec. 12, 1907	Dec. 12, 1907	Settled, \$10 and costs.
Owen	10650	Thomas & Teagardner, Spencer.	Ground pepper.	Dec. 16, 1907	Dec. 17, 1907	Settled, \$10 and costs.
Owen	10642	Thomas & Teagardner, Spencer.	Unsanitary grocery.	Dec. 17, 1907	Dec. 17, 1907	Settled, \$10 and costs.
Owen	10647	Spencer Mercantile Co., Spencer.	Cider vinegar.	Dec. 16, 1907	Dec. 17, 1907	Settled, \$10 and costs.
Owen		J. S. Harris, Spencer, Ind.	Tincture iodine.	Dec. 16, 1907	Dec. 17, 1907	Settled, \$10 and costs.
Vigo		John W. Hoff, Terre Haute.	Meat.	Dec. 2, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Vigo		Fred Frye, Terre Haute.	Meat.	Dec. 2, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Vigo		Frank B. Shirley, Terre Haute.	Pies and cakes exposed.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo	10789	Frank B. Shirley, Terre Haute.	Butter.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo		Aunted R. Norris, Terre Haute.	Meat.	Dec. 2, 1907	Dec. 2, 1907	Settled, \$10 and costs.
Vigo		Samuel Rosenbaum, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo		Samuel Rosenbaum, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo		Jacob Goldman, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$25 and costs.
Vigo		Joseph Goldman, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo		Harrison Berkowitz, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$25 and costs.
Vigo		Harrison Berkowitz, Terre Haute.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$25 and costs.
Vigo		Wm. J. Barnes, Ellettsville, Ind.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
Vigo		M. J. Keller, Decatur, Ind.	Whisky.	Dec. 5, 1907	Dec. 5, 1907	Settled, \$10 and costs.
White	10568	Dameynosi Schmitts, Decatur.	Unsanitary restaurant.	Dec. 11, 1907	Dec. 11, 1907	Settled, \$10 and costs.
Alaus	10569	Wm. J. Barnes, Ellettsville, Ind.	Fresh sausage.	Dec. 16, 1907	Jan. 2, 1908	Settled, \$10 and costs.
Adams	10571	Simon J. Hahn, Decatur.	Pan sausage.	Dec. 16, 1907	Jan. 2, 1908	Settled, \$10 and costs.
Bartholomew	8831	C. W. Adams, Columbus.	Fresh sausage.	Dec. 16, 1907	Jan. 2, 1908	Settled, \$10 and costs.
Bartholomew	10433	C. H. Fahring, Columbus.	Tincture iodine.	Aug. 3, 1907	Jan. 17, 1908	Settled, \$10 and costs.
Bartholomew	10502	A. H. Fahring, Columbus.	Tincture iodine.	Aug. 3, 1907	Jan. 17, 1908	Not guilty.
Carroll	8596	House & Updegraff, Columbus.	Aqua ammonia.	Dec. 11, 1907	Jan. 17, 1908	Not guilty.
Carroll		Wm. W. Snodberger, Delphi.	Leads.	Dec. 11, 1907	Jan. 17, 1908	Not guilty.
Carroll		P. W. VanStundy, Rockfield.	Leads.	Dec. 11, 1907	Jan. 17, 1908	Not guilty.
Davess	11058	Omar Carpus, Odon.	Spirits camphor.	Jan. 22, 1908	Jan. 22, 1908	Settled, \$10 and costs.
Davess		Wm. L. Story, Odon.	Tincture iodine.	Jan. 14, 1908	Jan. 28, 1908	Settled, \$10 and costs.
Davess		Wm. L. Story, Odon.	Tincture iodine.	Jan. 9, 1908	Jan. 9, 1908	Settled, \$10 and costs.
Davess		Bert E. Sneed, Odon.	Tincture iodine.	Jan. 10, 1908	Jan. 10, 1908	Settled, \$10 and costs.

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW FOOD AND DRUG LAW FROM NOVEMBER 1, 1907, TO SEPTEMBER 30, 1908—Continued.

COUNTY.	Lab. No.	Name and Address of Defendant.	Illegal Sale of	Information Filed.	Date of Trial.	Final Disposition of Case.
Marion	11075	Louis H. Fehrenback, Indianapolis, Ind.	Milk	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11115	John J. Horan, Indianapolis, Ind.	Milk	April 10, 1908	April 10, 1908	Settled, \$10 and costs.
Marion	11116	John W. Kelly, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11118	John G. Kistner, Indianapolis, Ind.	Milk	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11125	Anna R. Ferguson, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11131	Ethanon E. Johnson, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11137	James P. Stiltz, Indianapolis, Ind.	Milk	April 9, 1908	April 9, 1908	Settled, \$10 and costs.
Marion	11140	M. C. Shen & Co., Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11438	Henry A. Adseman, Indianapolis, Ind.	Milk	April 9, 1908	April 9, 1908	Settled, \$10 and costs.
Marion	11441	Isadore Lohrer, Indianapolis, Ind.	Milk	April 9, 1908	April 9, 1908	Settled, \$10 and costs.
Marion	11448	Henry W. Walters, Indianapolis, Ind.	Milk	April 8, 1908	April 8, 1908	Settled, \$10 and costs.
Marion	11444	Christian F. Volkening, Indianapolis, Ind.	Milk	April 4, 1908	April 4, 1908	Settled, \$10 and costs.
Marion	11473	John H. Horan, Indianapolis, Ind.	Cream	April 3, 1908	April 3, 1908	Settled, \$10 and costs.
Marion	11638	Elizabeth J. Hadley, Indianapolis, Ind.	Cream	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11640	Ernest Dietz, Indianapolis, Ind.	Milk	April 6, 1908	April 6, 1908	Settled, \$10 and costs.
Tippecanoe		Chas. M. McChelaud, Indianapolis, Ind.	Milk	April 10, 1908	April 10, 1908	Settled, \$10 and costs.
Tippecanoe		Anna Duffey, Lafayette, Ind.	Unsanitary conditions—milk.	April 9, 1908	April 9, 1908	Settled, \$25 and costs.
Tippecanoe		James Van Senger, Lafayette, Ind.	Dirty milk	April 10, 1908	April 10, 1908	Settled, \$10 and costs.
Vigo		James Lucas, West Lafayette, Ind.	Unsanitary conditions of dairy.	April 16, 1908	April 16, 1908	Settled, \$25 and costs.
Vigo		John Yopp, Terre Haute, Ind.	Meat sold under unsanitary conditions.	April 16, 1908	April 16, 1908	Settled, \$25 and costs.
Vigo		Andrew Rowe, Terre Haute, Ind.	Dirty meat store.	April 18, 1908	April 18, 1908	Settled, \$10 and costs.
Vigo		Andrew Rowe, Terre Haute, Ind.	Rotten liver.	April 18, 1908	April 18, 1908	Settled, \$25 and costs.
Vigo		George Neitive, Terre Haute, Ind.	Dirty bakery	April 15, 1908	April 15, 1908	Settled, \$25 and costs.
Vigo		James Georgopoulos, Terre Haute, Ind.	Confectionery exposed	April 16, 1908	April 16, 1908	Settled, \$10 and costs.
Vigo		Silas W. Snodgrass, Terre Haute, Ind.	Dirty restaurant	April 24, 1908	April 24, 1908	Settled, \$10 and costs.
Boone	11346	S. V. Murphy, Terre Haute, Ind.	Bad meat	April 28, 1908	April 28, 1908	Settled, \$10 and costs.
Boone		J. M. Fox, Lebanon	Spirits camphor	Aug. 14, 1908	Aug. 14, 1908	Settled, \$10 and costs.
Clay		James Cox, Lebanon	Dirty milk	Aug. 20, 1908	Aug. 20, 1908	Settled, \$10 and costs.
Clay		Geo. W. Ostwalt, Brazil	Unsanitary grocery	May 28, 1908	May 28, 1908	Settled, \$10 and costs.
Clay		Jermie Bogie, Brazil	Unsanitary grocery	May 28, 1908	May 28, 1908	Settled, \$10 and costs.
Clay		James Zandfonets, Brazil	Unsanitary ice cream manufactory	May 29, 1908	May 29, 1908	Settled, \$20 and costs.
Delaware		Chas. Elliott, Muncie	Uncovered hamburger.	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Harry Van Werton, Muncie	Lemonade in sine tub.	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		LeRoy Mahoney, Muncie	Uncovered meats.	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Monroe Huntzinger, Muncie	Uncovered ice cream cones	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Wm. Fletcher, Muncie	Exposed bread and meat.	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Jno. Buttersworth, Muncie	Exposed meats	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Dave Rock, Muncie	Exposed bread	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Edward Dalton, Muncie	Exposed lemonade	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.

Dr. Cur.	Ton Read, Murrie.	Exposed lemonade.	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Alabama	John D. D. C. C. C.	Milk	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Arkansas	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
California	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Colorado	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Delaware	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
District of Columbia	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Florida	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Georgia	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Idaho	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Illinois	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Indiana	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Iowa	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Kansas	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Kentucky	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Louisiana	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Maine	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Maryland	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Massachusetts	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Michigan	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Minnesota	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Mississippi	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Missouri	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Montana	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Nebraska	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Nevada	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
New Hampshire	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
New Jersey	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
New Mexico	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
New York	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
North Carolina	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
North Dakota	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Ohio	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Oklahoma	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Oregon	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Pennsylvania	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Rhode Island	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
South Carolina	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
South Dakota	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Tennessee	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Texas	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Vermont	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Virginia	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Washington	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
West Virginia	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Wisconsin	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Wyoming	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs
Yukon	John D. D. C. C. C.	Unsanitary slaughter house	Aug. 17, 1908	Aug. 19, 1908	Settled, \$10 and costs

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW FOOD AND DRUG LAW FROM NOVEMBER 1, 1907, TO SEPTEMBER 30, 1908—Continued.

COUNTY.	Lab. No.	Name and Address of Defendant.	Illegal Sale of	Information Filed.	Date of Trial.	Final Disposition of Case.
Marion	11075	Louis H. Fehrenbach, Indianapolis, Ind.	Milk	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11115	John J. Horan, Indianapolis, Ind.	Milk	April 10, 1908	April 10, 1908	Settled, \$10 and costs.
Marion	11116	John W. Kelly, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11118	John G. Kistner, Indianapolis, Ind.	Milk	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11125	Anna R. Ferguson, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11131	Elhanon B. Johnson, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11137	James P. Stultz, Indianapolis, Ind.	Milk	April 9, 1908	April 9, 1908	Settled, \$10 and costs.
Marion	11140	M. C. Shea & Co., Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11438	Henry Adreman, Indianapolis, Ind.	Milk	April 11, 1908	April 11, 1908	Settled, \$10 and costs.
Marion	11438	Henry W. Walters, Indianapolis, Ind.	Milk	April 9, 1908	April 9, 1908	Settled, \$10 and costs.
Marion	11441	Isadore Lother, Indianapolis, Ind.	Milk	April 8, 1908	April 8, 1908	Settled, \$10 and costs.
Marion	11444	Christian F. Volkening, Indianapolis, Ind.	Milk	April 4, 1908	April 4, 1908	Settled, \$10 and costs.
Marion	11448	John H. Horan, Indianapolis, Ind.	Cream	April 3, 1908	April 3, 1908	Settled, \$10 and costs.
Marion	11473	Elizabeth J. Hadley, Indianapolis, Ind.	Milk	April 7, 1908	April 7, 1908	Settled, \$10 and costs.
Marion	11638	Ernest Dietz, Indianapolis, Ind.	Milk	April 6, 1908	April 6, 1908	Settled, \$10 and costs.
Marion	11640	Chas. M. McChelland, Indianapolis, Ind.	Milk	April 10, 1908	April 10, 1908	Settled, \$10 and costs.
Tippecanoe		Anna Duffey, Lafayette, Ind.	Unsanitary conditions—milk.	April 9, 1908	April 9, 1908	Settled, \$25 and costs.
Tippecanoe		John VacSagorh, Lafayette, Ind.	Unsanitary conditions of dairy	April 10, 1908	April 10, 1908	Settled, \$25 and costs.
Vigo		James Lucas, West Lafayette, Ind.	Unsanitary conditions of dairy	April 16, 1908	April 16, 1908	Settled, \$25 and costs.
Vigo		John Yopp, Terre Haute, Ind.	Dirty meat store	April 16, 1908	April 16, 1908	Settled, \$25 and costs.
Vigo		Andrew Rowe, Terre Haute, Ind.	Rotten liver	April 18, 1908	April 18, 1908	Settled, \$25 and costs.
Vigo		George Nottive, Terre Haute, Ind.	Dirty bakery	April 15, 1908	April 15, 1908	Settled, \$25 and costs.
Vigo		James Georgopoulos, Terre Haute, Ind.	Confectionery exposed	April 16, 1908	April 16, 1908	Settled, \$25 and costs.
Vigo		Silas W. Snodgrass, Terre Haute, Ind.	Dirty restaurant	April 24, 1908	April 24, 1908	Settled, \$10 and costs.
Vigo		S. V. Murphy, Terre Haute, Ind.	Bad meat	April 28, 1908	April 28, 1908	Settled, \$10 and costs.
Boone	11346	J. M. Fox, Lebanon	Spirita camphor	Aug. 14, 1908	Aug. 14, 1908	Settled, \$10 and costs.
Boone		James Coe, Lebanon	Dirty milk	Aug. 20, 1908	Aug. 20, 1908	Settled, \$10 and costs.
Clay		Geo. W. Ostwald, Brazil	Unsanitary grocery	May 28, 1908	May 28, 1908	Settled, \$10 and costs.
Clay		Jerome Bagle, Brazil	Unsanitary grocery	May 28, 1908	May 28, 1908	Settled, \$10 and costs.
Clay		James Zaratoneski, Brazil	Unsanitary grocery	May 29, 1908	May 29, 1908	Settled, \$20 and costs.
Delaware		Chas. Elliott, Muncie	Uncovered hamburger	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		LeRoy Mahoney, Muncie	Lemonade in sicc tub.	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Monroe Huntzinger, Muncie	Uncovered meats	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Omar Morrison, Muncie	Uncovered ice cream cones	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.
Delaware		Wm. Fletcher, Muncie	Uncovered bread and meat	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Joe. Butterworth, Muncie	Exposed meats	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Dave Rock, Muncie	Exposed bread	Aug. 19, 1908	Aug. 19, 1908	Settled, \$10 and costs.
Delaware		Edward Dalton, Muncie	Exposed lemonade	Aug. 18, 1908	Aug. 18, 1908	Settled, \$10 and costs.

D. V. P.	Tom Hall, Murri:	Exposed lemonade	Aug. 1, 1908	Aug. 19, 1908	Settled, \$10 and costs
Elkhart	John Rughoff, Connersville	Milk	Aug. 1, 1908	Aug. 21, 1908	Settled, \$25 and costs
Fayette	John Rughoff, Connersville	Unsanitary slaughter house	July 17, 1908	July 17, 1908	Settled, \$20 and costs
Fountain	J. H. Smith, Covington	Unsanitary slaughter house	Sept. 18, 1908	Sept. 18, 1908	Settled, \$20 and costs
Greene	Byrum Bros., Bloomfield	Uncovered prepared foods	Sept. 18, 1908	Sept. 18, 1908	Settled, \$15 and costs
Late	C. Nojehowich, Gary	Tincture iodine	Sept. 16, 1908	Sept. 16, 1908	Settled, \$10 and costs
Late	Hosa Begovich, Gary	Dirty bakeshop	Sept. 23, 1908	Sept. 23, 1908	Settled, \$10 and costs
Late	J. Wautonski, Gary	Dirty bakeshop	Sept. 23, 1908	Sept. 23, 1908	Settled, \$10 and costs
Late	Frank T. Elenbaek, Hammond	Unsanitary dairy	Aug. 27, 1908	Aug. 27, 1908	Settled, \$10 and costs
Laporte	Wm. H. Norman, Hammond	Unsanitary dairy	Aug. 27, 1908	Aug. 27, 1908	Settled, \$10 and costs
Laporte	Wm. Miller, Michigan City	Unsanitary slaughter house	Aug. 25, 1908	Aug. 25, 1908	Settled, \$10 and costs
Marion	Wm. Heller, Michigan City	Unsanitary slaughter house	Aug. 25, 1908	Aug. 25, 1908	Settled, \$10 and costs
Marion	Ed. G. Miller, Michigan City	Unsanitary slaughter house	Aug. 25, 1908	Aug. 25, 1908	Settled, \$10 and costs
Marion	Lou Stockman, Indianapolis	Aqua ammonia	June 15, 1908	July 31, 1908	Settled, \$10 and costs
Marion	Dan. M. Moroney, Indianapolis	Aqua ammonia	June 15, 1908	July 31, 1908	Settled, \$10 and costs
Marion	Wm. H. Burget, Indianapolis	Tincture iodine	June 16, 1908	July 31, 1908	Settled, \$10 and costs
Marion	C. T. Bedford, Indianapolis	Aqua ammonia	June 16, 1908	July 31, 1908	Settled, \$10 and costs
Marion	Chas. Traub, Indianapolis	Spirits camphor	June 16, 1908	July 31, 1908	Settled, \$10 and costs
Marion	John M. Rhodes, Indianapolis	Lime water	June 29, 1908	July 31, 1908	Settled, \$10 and costs
Miami	P. E. Jones, Peru	Spirits camphor	June 23, 1908	July 31, 1908	Settled, \$10 and costs
Miami	Geo. Jacob, Peru	Milk	June 19, 1908	June 9, 1908	Settled, \$10 and costs
Miami	Lee Levy, Peru	Unsanitary slaughter house	June 19, 1908	June 9, 1908	Settled, \$10 and costs
Morgan	Frank Means, Peru	Unsanitary slaughter house	July 9, 1908	July 9, 1908	Settled, \$10 and costs
Morgan	Webb Harper, Martinsville	Unsanitary slaughter house	July 15, 1908	July 15, 1908	Settled, \$10 and costs
Morgan	Job Nutter, Martinsville	Unsanitary dairy	Aug. 3, 1908	Aug. 3, 1908	Settled, \$10 and costs
Morgan	Ben Lewis, Martinsville	Unsanitary dairy	June 9, 1908	June 9, 1908	Settled, \$10 and costs
Morgan	Wm. Merryman, Martinsville	Unsanitary dairy	June 9, 1908	June 9, 1908	Settled, \$10 and costs
Owen	Dr. F. W. Dunkensalter, Spencer	Unsanitary hotel	June 11, 1908	June 11, 1908	Settled, \$10 and costs
Owen	Wm. Moss & Co., Spencer	Tincture iodine	June 6, 1908	June 6, 1908	Settled, \$25 and costs
Parke	Mr. Melurlee, Bloomington	Cider vinegar	Aug. 27, 1908	Aug. 27, 1908	Settled, \$10 and costs
Putnam	Ed. Haywood, Rushville	Unsanitary bakery	July 28, 1908	July 28, 1908	Settled, \$10 and costs
Rush	H. B. Kirkhoff, Lafayette	Pan sausage	May 26, 1908	May 26, 1908	Settled, \$50 and costs
Tippecanoe	John Kohl, Lafayette	Maple sugar candy	April 17, 1908	April 17, 1908	Quashed
Vermillion	Geo. Spring, Clinton	Maple sugar	Aug. 21, 1908	Aug. 21, 1908	Settled, \$10 and costs
Vermillion	Tony Cvelotte, Clinton	Unsanitary store	Aug. 15, 1908	Aug. 15, 1908	Settled, \$10 and costs
Vermillion	Frank Cvelotte, Clinton	Bad meat	May 16, 1908	May 16, 1908	Settled, \$10 and costs
Vermillion	Chas. Dorman, Clinton	Bad meat	May 15, 1908	May 15, 1908	Settled, \$10 and costs
Vermillion	Pactian Puthi, Clinton	Unsanitary store	May 27, 1908	May 27, 1908	Settled, \$25 and costs
Vigo	Gus Neki, Terre Haute	Bad meat	May 27, 1908	May 27, 1908	Settled, \$10 and costs
Vigo	Angelo Lomano, Terre Haute	Uncovered weinerburg	Aug. 28, 1908	Aug. 28, 1908	Settled, \$10 and costs
Vigo	Chas. Seymour, Terre Haute	Uncovered bread and meat	Aug. 28, 1908	Aug. 28, 1908	Settled, \$10 and costs
Vigo	Jacob Davis, Terre Haute	Lemonade	Aug. 28, 1908	Aug. 28, 1908	Settled, \$10 and costs
Vigo		Orange cider	Aug. 28, 1908	Aug. 28, 1908	Settled, \$10 and costs

REPORT FROM FOOD LABORATORY.

DAIRY PRODUCTS.

During the year 681 samples of milk have been analyzed, of which 614 were above standard and 67, or 9.8 per cent were illegal. This is a decided improvement over last year, when the percentage of adulteration was 15.3. These samples represent milk from dairies supplying 58 cities and towns in every part of the State, the milk from which was sent in by city milk inspectors, by the dairy-men, by consumers, or purchased by a state inspector. Of the entire number analyzed, but one sample contained a preservative; this was in the form of borax. Special attention has been given the past year to the cleanliness of operation of the dairy. It is now well understood that milk, though conforming to every requirement of standards, may still be unfit for use because of the presence of filth or injurious bacteria. In order to improve the character of the milk supply, much attention has been given by both state and city inspectors to the sanitary condition of the dairy. The dairyman of today has no prejudice, as he has had in former years, against the visit of the inspector, nor does he occupy the position he once held that he has the right to conduct his business as he pleases, and, if he satisfies his customer, state and city have no right to interfere.

While a year ago our report stated that "Farmers engaged in the production of milk have apparently no idea of sanitation," this statement is not true today. In every part of the State the dairy industry is beginning to realize the necessity for better business methods, for finer herds, better light and ventilation in their stables, and more thoroughly equipped milk rooms. The consumer is also taking more interest in the character of his milk than ever before, and in most instances is willing to pay for it the slightly increased price which this proper production entails.

On the 7th and 8th of September the State Board of Health held a convention of state and city health departments with the dairymen of Indiana for the purpose of studying sanitary milk production and distribution, and other problems which are vital to the milk producer and consumer. The purpose of the convention was to give the dairymen and officials who are enforcing the milk laws an opportunity to get together; to remove any cause for misunderstanding; and to show the dairymen of the State that rigid regulation of the milk supply will benefit the farmer by teaching the consumer that clean milk is worth more than dirty milk.

This was the first conference of its kind to be held in the State.

and resulted in a great deal of good, both to the dairymen and to city and state officials, and to inspectors who are engaged in enforcing the dairy laws. A spirit was manifested throughout, both by officials and dairymen, that was most commendable and indicated the close relationship existing between them. The value and necessity of co-operation was strongly urged, both for the sake of improved conditions surrounding the milk supply at the point of distribution and, as well, at the dairy.

MILK ANALYSES BY CITIES AND TOWNS.

Locality.	Total Number Samples.	Number Above Standard.	Number Below Standard.	Per Cent. Below Standard.	Per Cent. Total Solids in Lowest Sample.	Per Cent. Fat in Lowest Sample.
Anderson.....	4	4	0	0.0		3.8
Auburn.....	1	1	0	0.0		4.7
Brasil.....	1	3	11	25.0		3.3
Clay City.....	1	1	0	0.0		5.2
Clermont.....	1	1	0	0.0		3.8
Columbus.....	6	6	0	0.0		4.0
Crawfordsville.....	26	23	3	11.5	12.07	2.4
Crown Point.....	2	2	0	0.0		3.4
Danville.....	1	1	0	0.0		6.0
Decatur.....	4	4	0	0.0		3.4
Elkhart.....	4	2	2	50.0	11.67	6.0
Elwood.....	1	1	0	0.0		6.0
Fort Wayne.....	25	24	1	4.0	11.78	3.2
Frankfort.....	10	10	0	0.0		4.1
French Lick.....	1	1	0	0.0		
Gary.....	59	48	11	18.6	10.53	2.7
Goshen.....	25	22	3	12.0	9.99	2.5
Hammond.....	90	81	9	10.0	11.42	2.5
Huntington.....	9	8	1	11.1	11.73	3.0
Indianapolis.....	57	52	5	8.7	10.58	1.0
Kokomo.....	7	6	1	14.3		3.2
Lafayette.....	11	2	9	81.8	9.57	3.1
Laporte.....	5	5	0	0.0		3.4
Lebanon.....	2	2	0	0.0		3.8
Ligonier.....	5	5	0	0.0		3.6
Madison.....	37	37	0	0.0		3.4
Malott Park.....	1	1	0	0.0		3.8
Martinsville.....	1	1	0	0.0		3.5
Michigan City.....	12	12	0	0.0		3.9
Monticello.....	1	1	0	0.0		5.8
Muncie.....	30	27	3	10.0	11.13	2.8
New Albany.....	23	23	0	0.0		3.3
New Augusta.....	10	8	2	20.0		2.0
Newcastle.....	13	10	3	23.0	9.13	1.0
Noblesville.....	1	1	0	0.0		5.6
North Vernon.....	14	14	0	0.0		3.4
Palmer.....	1	1	0	0.0		3.8
Peru.....	28	25	3	10.7	12.36	3.2
Pittsboro.....	1	1	0	0.0		3.8
Plainfield.....	1	1	0	0.0		4.0
Plymouth.....	2	2	0	0.0		3.4
Portland.....	1	1	0	0.0		3.4
Princeton.....	2	2	0	0.0		4.2
Richmond.....	7	7	0	0.0		3.4
Seymour.....	8	8	0	0.0		3.5
Shelbyville.....	5	5	0	0.0		3.3
South Bend.....	77	71	6	7.7	11.10	2.8
Spencer.....	4	4	0	0.0		3.8
Terre Haute.....	1	1	0	0.0		
Thorntown.....	1	1	0	0.0		4.6
Valparaiso.....	13	12	1	7.7	11.90	2.5
Vincennes.....	9	9	0	0.0		3.8
Wabash.....	12	9	3	25.0	11.70	2.7
Warsaw.....	3	3	0	0.0		3.7
Whiting.....	1	1	0	0.0		3.8
Fifty-five cities.....	681	614	67	9.8+		

¹Very dirty.²Five dirty.³One contained borax.⁴Three dirty.⁵Four very dirty.⁶Two dirty.

CREAM.

Thirty-nine samples of cream were analyzed, of which seven, or 17.9 per cent were classed as adulterated. Three of the adulterated samples were so classed because they contained dirt. But four samples, or 10 per cent, fell below the legal standard of 18 per cent fat. This is a decided improvement over last year. It is apparent that milkmen and skimming stations now understand that cream cannot legally be sold unless it conforms to the standard.

CREAM—LEGAL.

Lab. No.	Dealer.	Address.	Per Cent. Butter Fat.
10149	D. F. Maish	Frankfort	18.0
10151	Ris Pearcy	Frankfort	18.0
10376	Minton & Strodlng	Muncie	24.8
10562	Levy Whitmeyer	Noblesville	30.0
11109	Polk's	Indianapolis	19.0
11111	Browder Ice Cream Co.	Indianapolis	30.0
11112	Browder Ice Cream Co.	Indianapolis	19.2
11114	John J. Horan	Indianapolis	30.0
11117	Antrim	Indianapolis	19.0
11119	Browder Ice Cream Co.	Indianapolis	23.0
11121	Browder Ice Cream Co.	Indianapolis	21.0
11126	W. H. Roberts	Malott Park	19.0
11141	Browder	Indianapolis	19.0
11146	Ballard	Indianapolis	22.0
11147	Vernon Schwicho	Indianapolis	18.0
11150	Browder	Indianapolis	18.0
11151	Enos Leonard	Indianapolis	18.0
11440	A. Gowens	Indianapolis	18.4
11446	Jessup & Antrim	Indianapolis	19.6
11631	Joseph McAllister	Muncie	19.0
11642	Browder	Indianapolis	18.0
11663	Marion Reed	Muncie	19.0
11702	Allison Realty	Fort Wayne	32.0
11804	Galey	Crawfordsville	26.0
11819	Browder	Indianapolis	26.0
11835	G. T. Roydon	Monticello	18.8
12114	Sam E. Brown	Decatur	26.0
12115	Ed S. Christian	Decatur	20.0
12116	W. R. Smith	Decatur	21.0
12629	Wm. B. Clark	Shelbyville	23.6
12631	Harry L. Jameson	Shelbyville	19.4
12678	Wm. F. Klinger	Huntington	35.6
12685	Jas. Starbuck	Huntington	23.2
12687	Enos First	Huntington	26.8
12775	Kokomo Sanitary Milk and Ice Cream Co.	Kokomo	22.2
12778	Kokomo Sanitary Milk and Ice Cream Co.	Kokomo	31.0
12899	Sig Frank	Kokomo	36.0
11636	Wm. Ball	Indianapolis	18.0

CREAM—ILLEGAL.

Lab. No.	Dealer.	Address.	Per Cent. Butter Fat.	Remarks.
10233	Chamberlain & Son	Lafayette	22.0	Much dirt present.
10236	M. Chamberlain & Son	Lafayette	29.0	Much dirt present.
10385	O. P. Jones	Muncie	15.6	Below standard.
10392	J. C. McAllister	Muncie	16.8	Below standard.
11143	Riley E. Hess	Indianapolis	15.0	Below standard.
11628	W. T. Minton	Muncie	24.0	Much dirt present.
11643	Polk & Co.	Indianapolis	13.0	Below standard.

BUTTER.

Eighty-nine samples of butter were analyzed, of which 60 were classed as pure and 29 illegal. Twenty-one of the 29 illegal samples were sent in by health officers or dealers who suspected the character of the butter. Some oleomargarine is still sold when butter is called for, but both dealers and manufacturers of this wholesome food product are beginning to realize the wisdom of selling oleomargarine on its merits and not as a substitute for butter. The greatest fraud is probably practiced by restaurants and boarding-house keepers, who buy uncolored oleomargarine, which they color and serve as butter. This practice is contrary both to federal and state laws, but because of the character of the business it cannot be broken up except by the most rigid inspection.

The character of the country butter sold throughout the State is most unsatisfactory. Occasionally the butter produced at the farm is of fair quality, but by far the larger amount is of such a poor grade that it cannot compete with butter produced at the creamery, and consequently much of it finds its way to the renovating factory. Samples of country butter purchased on the Indianapolis market have contained as much as 33 per cent of moisture. The average water content of these butters is so high that they cannot legally be sold. The only explanation for the unsatisfactory character of country butter, once so highly prized and in such demand, is the lack of knowledge of butter-making by the maker and the use of unsatisfactory utensils.

EVAPORATED MILKS.

The character of the evaporated and condensed milks examined during the past year has varied greatly. Of the 23 samples analyzed, nine samples were decidedly low in solid content and were evidently made from partly skimmed milk. One sample contained but 22.07 per cent total solids, with a fat content of 5.8 per cent, and another showed 22.45 per cent total solids and a fat of 5.8 per cent. A third showed 23.09 total solids, with a fat of 5.8 per cent. A comparison of the figures obtained this year with earlier analyses shows a decided lowering of the character of the evaporated milks on the market. It is contended by the manufacturers that the present standard is too high and should be lowered, but the fact that they have heretofore uniformly made high-grade goods belies their present assertion. An extensive investigation of the character of evaporated and condensed milks is under way and will be reported another year.

BUTTER—LEGAL

Lab. No.	Manufacturer or Dealer.	Address.	Butyro at 40° C.	Reichert-Meissl.	Halphen Test.	Moisture.	Spoon Test.
9856	P. Hasler and H. Cretter.	Connersville.	41.8	28.50	Negative		
9853	M. Wenger & Son.	Connersville.	42.8	24.66	Negative		Very little foam; sputters.
9776	L. T. Smith.	South Bend.	42.8	25.10	Negative		Foams.
9796	Brobeck Bro.	South Bend.	43.4	25.90	Negative		Foams.
9803	Sallinger Bros.	South Bend.	42.9	27.80	Negative		Foams.
9883	Traders Palace Grocery.	Plymouth.	43.7	24.66	Negative		Foams.
10079	R. A. Elbert.	Michigan City.	43.6	24.72	Negative		
10282	J. A. Long.	Union City.				12.91	
10283	J. L. Angles.	Evansville.	42.8	24.59	Negative		Foams.
10332	J. M. Sweeney.	Dugger.	43.3	25.01	Negative		Foams.
10338	Dr. J. Coopertier.	Madison.	42.9	26.30	Negative		Little foam.
10355	L. Barton.	Indianspolis.	43.8	25.20	Negative		Foams.
10396	Sent in from.	Martinsville.	42.5	25.20	Negative		Foams.
10414	Haynes Cafe.	Indianspolis.	43.4	28.30	Negative		Little foam.
10473	Oscar Bowen.	Monticello.	42.0	26.86	Negative		Foams.
10474	Wm. Roth.	Monticello.	44.1	21.98	Negative		Foams.
10477	Henry Kord.	Clay City.	46.2	26.98	Negative		Little foam.
10522	Maryland Grocery Co.	Indianspolis.	42.7	24.66	Negative		Foams.
10523	Sent in from.	Indianspolis.	44.3	24.85	Negative		Foams.
10675	Chas. W. Davis.	Monticello.	41.8	27.60	Negative		Foams.
10727	Foster-Fowler Cafe.	Indianspolis.	44.2	24.36	Negative		Foams.
10729	P. F. Magenheimer.	Indianspolis.	44.5	25.20	Negative		Little foam.
10820	E. H. Day.	Carmel.	41.7	25.70	Negative		Foams.
10823	John T. Willet.	South Bend.	39.8	27.03	Negative		Foams.
10894	Dr. W. D. Cox.	Terre Haute.	42.1	26.56	Negative		Some foam; sputters.
10895	Jacob Schram.	Indianspolis.	41.8	26.40	Negative		Foams.
10897	W. S. Bowman & Co.	Peru.	43.0	29.70	Negative		Foams.
11078	Leslie Christy, V. S.	Terre Haute.	40.2	27.18	Negative		Foams.
11155	Alfred E. Gusherts.	Warsaw.	41.6	26.49	Negative		Very little foam; unusual sample.
11304	H. E. Young.	Huntington.	41.9	23.04	Negative	15.75	Foams.
11367	E. C. Hall & Bro.	Laporte.	42.7	18.84	Negative		Foams.
11393	Frank B. Heust.	Laporte.	42.0	27.88	Negative		Foams.
11399	August Patterson.	Laporte.	44.1	22.00	Negative		Foams.
11405	Boyd W. Grandstaff.	Laporte.	42.0	27.38	Negative		Foams.
11410	John S. Minch.	Laporte.	42.2	26.17	Negative		Foams.
11416	Robert & Garwood.	Laporte.	41.6	28.79	Negative		Foams.
11489	Ed E. Tiekman.	Goshen.	41.5	26.21	Negative		Foams.
11506	Sallinger Bros.	Goshen.	42.0	25.61	Negative		Foams.
11526	J. G. Openheim.	Goshen.	43.0	24.00	Negative		Foams.
11566	Dr. C. E. Ragon.	Cinton.					(No arenic.)

BUTTER—ILLEGAL.

Lab. No.	Manufacturer or Dealer.	Address.	Butyro at 40° C.	Reichert-Meisel.	Halphen Test.	Moisture.	Spoon Test.
10231	Busy Bee Lunch.	Indianapolis.	46.1	8.23	Negative.		Sputters.
10417	W. C. Haynes.	Indianapolis.	44.2	21.38	Negative.		Very little foam.
10703	Sent in from.	Indianapolis.	50.3	0.86	5% cotton seed.		No foam.
10704	Sent in from.	Indianapolis.	50.3	0.88	5% cotton seed.		No foam.
10711	Sent in from.	South Bend.	48.9	0.80	Negative.		No foam.
11081	Sent in from.	Michawaka.	49.2				No foam.
11241	Sent in from.	South Bend.	50.6				No foam.
11242	Sent in from.	Michawaka.	50.5				No foam.
11243	Sent in from.	South Bend.	48.5				No foam.
11616	Sent in from.	Indianapolis.	47.0	0.58	Negative.		No foam: sputters.
11618	Sent in from.	Indianapolis.	47.0				
	Sent in from.	Indianapolis.	48.0				
	Sent in from.	Indianapolis.	48.3				
	Sent in from.	Indianapolis.	48.6				
	Sent in from.	Indianapolis.	48.0				
	Sent in from.	Indianapolis.	48.4				
	Sent in from.	Indianapolis.	48.5				
	Sent in from.	Indianapolis.	48.4				
	Sent in from.	Indianapolis.	48.5				
	Sent in from.	Indianapolis.	48.5				
	Sent in from.	Indianapolis.	47.8				
	Sent in from.	Indianapolis.	48.2				
11834	Sent in from.	Jeffersonville.	48.2	3.00	Negative.		No foam: sputters.
11894	Peter Mickell.	Lafayette.	43.0	21.14			Little foam: sputters.
11902	F. Menun.	Lafayette.	43.5	22.78			Foam little: sputters.
11903	John Kohl.	Lafayette.	42.3	20.67			Foam little: sputters.
12872	Sent in from.	Georgia.	42.3	26.63		33.32	
12944	McCaffery & Co.	Peru.	42.7	26.83		31.38	
12946	McCaffery & Co.	Peru.	43.7	25.83		24.13	
12851	J. H. Foley.	Logansport.	44.4	27.14		27.11	

EVAPORATED MILK.

Lab. No.	Brand.	Manufacturer.	Per Cent. Fat.	Per Cent. Solids.	Per Cent. Ash.	Times Condensed.	Per Cent. Fat in Original Milk.
11044		Dixon Miller Co., Midland	6.9	26.32	1.33	1.9	3.1
11360		Sent in from Indianapolis.	6.0				
11368		Sent in from Indianapolis.	7.5	76.05	1.70	2.4	3.1
11836		Sent in from Indianapolis.	4.2	70.07	1.85	2.6	1.6
11940		Sent in from Sheridan.	6.1	24.50	1.34	1.82	3.2
11941	Pet.	Helvetia Milk Condensing Co., Highland, Ill.	7.2	26.18	1.41	2.01	3.5
11942	Carnation.	Pacific Coast Cond. Milk Co., Seattle, Wash.	7.6	26.11	1.39	1.98	3.8
11943	Wilson's.	Indiana Condensed Milk Co., Sheridan, Ind.	5.8	23.09	1.35	1.93	2.9
11944	Star.	Michigan Condensed Milk Co., Lansing, Mich.	6.6	28.69	1.64	2.34	2.8
11945		Van Camp Packing Co., Indianapolis	7.2	29.03	1.96	2.26	3.1
11946		Van Camp Packing Co., Indianapolis	7.4	30.07	1.57	2.34	3.3
12281	Wilson's.	Indiana Condensed Milk Co., Sheridan	5.8	22.07	1.86	1.9	3.0
12282	Pet.	Helvetia Milk Cond. Co., Highland, Ill.	7.8	28.67	1.99	2.2	3.5
12283		Helvetia Milk Cond. Co., Highland, Ill.	6.6	27.41	1.57	2.2	3.0
12284	Highland.	Van Camp Packing Co., Indianapolis	7.0	27.45	1.67	2.3	3.0
12502	Daadem.	Helvetia Milk Cond. Co., Highland, Ill.	6.6	26.51	1.58	2.2	3.0
12503	Peerless.	Schnull & Co., Indianapolis.	7.4	30.52	1.76	2.5	3.2
12504	Star.	Borden Co., New York.	6.8	26.86	1.52	2.1	3.2
12505	Wilson's.	Michigan Condensed Milk Co., New York.	5.8	22.45	1.30	1.8	3.2
12506	Carnation.	Indiana Condensed Milk Co., Sheridan	7.0	24.71	1.38	1.9	3.6
12619	None Such.	Pacific Coast Condensed Milk Co., Seattle, Wash.	7.2	27.05	1.57	2.2	3.3
12817		McNeil & Higgins, Chicago, Ill.	7.8	27.05	1.57	2.21	3.5
12887		Sent in from Kokomo, Ind.	Traces.				

BUTTERMILK.

Seven samples of buttermilk have been analyzed during the year and all have been found to be true buttermilks. Some of them contained an appreciable amount of fat, showing a decided loss to the creamery.

BUTTERMILK—LEGAL.

Lab. No.	Sent in by	Per Cent. of Fat.	Added Water.
10592	John T. Willett, South Bend.....	.6	0.0
10607	————, West Lafayette.....	.3	0.0
10608	————, West Lafayette.....	.23	0.0
10609	————, West Lafayette.....	.30	0.0
10610	————, West Lafayette.....	.05	0.0
10611	————, West Lafayette.....	.55	0.0
10612	————, West Lafayette.....	.55	0.0

MOTHER'S MILK.

While the analysis of breast milk is not part of the work of the department, yet occasional analyses have been made at the request of physicians. The character of the milks analyzed has varied greatly. In one instance the fat content was but 1.8 per cent, while in another case it ran up to 6 per cent.

MOTHER'S MILK.

Lab. No.	Sent in by	Per Cent. Fat.	Per Cent. Nitrogen.
10226	Dr. Rissler, Indianapolis.....	2.2	.....
11088	Dr. Martin, Indianapolis.....	3.4	.....
11305	Dr. R. S. Rissler, Indianapolis.....	6.0	.....
11757	Dr. R. S. Rissler, Indianapolis.....	3.9	.....
12072	————, Hartford City.....	1.8	1.5
12348	Dr. E. M. Young, Sheridan.....	2.8	2.24
12579	Dr. E. M. Young, Sheridan.....	3.0	.....
12587	Dr. T. D. Allhands, Wingate.....	2.5	1.26
12716	Dr. T. C. Dodda, Hartford City.....	2.7	1.22
12877	————, Indianapolis.....	3.8	.....

ICE CREAM.

Ninety-four samples of ice cream were analyzed during the year, 69 of which met the legal requirement of 8 per cent butter fat, while 25, or 24.5 per cent, were below standard. In 1907, 40.4 per cent were below standard. This indicates a decided improvement during the past year. Many manufacturers evidently do not understand the method of determining the fat content of their product, while others are so careless as to use stock of unknown composition. Goods manufactured under such conditions must of course vary in character, and it is not surprising that they are occasionally low in

butter fat content. In but one instance has artificial color been found in the ice cream, and in no case has added starch or thickener other than gelatin been observed.

ICE CREAMS—LEGAL.

Lab. No.	Manufacturer.	Address.	Fat Per Cent.
9936	Louis Nebeker.....	Covington.....	14.0
9937	Chas. Rennaw.....	Crawfordsville.....	8.0
9947	Furnas.....	Indianapolis.....	10.0
9949	Fosdick Ice Cream Co.....	Crawfordsville.....	9.6
9950	Ballard Ice Cream Co.....	Indianapolis.....	12.0
9951	J. C. Wampler.....	Crawfordsville.....	11.4
9952	Furnas Ice Cream Co.....	Indianapolis.....	18.8
9955	D. J. Chamberlain & Son.....	Lafayette.....	10.0
10059	Otto Albert.....	Plymouth.....	10.0
10061	Schlusser Bros.....	Plymouth.....	10.8
10114	Michigan City Ice and Cold Storage Co.....	Michigan City.....	10.0
10115	J. Alexander.....	Michigan City.....	19.5
10133	Florence Forthoffer.....	Princeton.....	12.0
10136	Ed Hallett.....	Princeton.....	14.0
10182	Geo. Chobers.....	Anderson.....	10.5
10183	Hughes & Jones.....	Anderson.....	18.0
10184	W. H. Larmore.....	Anderson.....	8.4
10209	Standard Ice Cream Co.....	South Bend.....	8.8
10210	Chas. Glouri.....	South Bend.....	8.8
10211	Philadelphia.....	South Bend.....	12.0
10217	Sbragia & Bardelli.....	Hammond.....	8.6
10218	Woodhull Ice Cream Co.....	Hammond.....	8.4
10223	Bicknell Drug Co.....	Hammond.....	8.4
10224	Brahos Bros.....	Hammond.....	12.4
10225	Woodhull Ice Cream Co.....	Hammond.....	9.2
10367	Campbell Ice Cream Co.....	Muncie.....	11.2
10462	W. T. Exmyer.....	Peru.....	10.0
10403	Columbus Ice Cream Co.....	Columbus.....	11.2
10484	John W. Redenack.....	Columbus.....	19.2
10487	Laharoko Bros.....	Columbus.....	24.4
10537	Cassell & Son.....	Vincennes.....	10.8
10555	Furnas Ice Cream Co.....	Indianapolis.....	9.4
10556	Furnas Ice Cream Co.....	Indianapolis.....	9.4
10624	Jones & Crawford.....	Brasil.....	8.0
10639	Jas. Zarefonetis.....	Brasil.....	9.6
10666	Jas. Zarefonetis.....	Brasil.....	9.2
11361	Amos Gipe.....	Wabash.....	10.0
11716	Sent in from Terre Haute.....	Terre Haute.....	8.0
11735	J. Roumeliat.....	Indianapolis.....	9.2
11739	Furnas Ice Cream Co.....	Indianapolis.....	10.0
11845	A. Tillman.....	Wabash.....	11.8
11849	Jessup & Antrim.....	Indianapolis.....	9.0
11862	Amos Gipe.....	Wabash.....	8.4
12050	Roempke & Co.....	Martinsville.....	13.2
12184	John Delf.....	Noblesville.....	8.8
12185	H. Henry.....	Noblesville.....	8.2
12210	A. G. Baldwin.....	Indianapolis.....	8.8
12468	Furnas.....	Indianapolis.....	10.6
12469	Ballard.....	Brasil.....	9.0
12584	Jas. Zarefonetis.....	Brasil.....	9.0
12590	Sent in from Farmersburg.....	.....	9.0
12591	Sent in from Farmersburg.....	.....	8.0
12662	Sent in from Huntington.....	.....	0.6
12676	Leininger's.....	Elkhart.....	15.0
12689	Howard L. Hoover.....	Richmond.....	8.4
12711	Sanders Smith.....	Plainfield.....	8.2
12732	Jas. Zarefonetis.....	Brasil.....	9.2
12798	N. R. Coleman.....	Crawfordsville.....	8.2
12799	John Wampler.....	Crawfordsville.....	14.0
12800	Geo. Toedick.....	Goshen.....	10.4
12831	Thiele Bros.....	Elkhart.....	8.1
12832	St. Joe Ice Cream Co.....	.....	12.4
12878	Sent in from Clay City.....	.....	8.0
12886	Sent in from Kokomo.....	.....	8.4
12890	Sent in from Kokomo.....	.....	12.0
12891	Sent in from Kokomo.....	.....	10.4
12816	Sent in from Clay City.....	.....	8.4
12772	Jersey Cream Co.....	Newcastle.....	8.4
12783	Kokomo Sanitary Milk and Ice Cream Co.....	Kokomo.....	8.4

ICE CREAMS—ILLEGAL.

Lab. No.	Manufacturer.	Address.	Per Cent. Fat.	Remarks.
9948	Sprow.....	Crawfordsville.....	7.4	Below standard.
10840	Jas. Spaguardi.....	Brazil.....	6.4	Below standard.
10982	Sent in from Bicknell.....	.....	4.6	Below standard.
11362	Young & Tillman.....	Wabash.....	7.2	Below standard.
11733	Goldsmith Ice Cream Co.....	Terre Haute.....	7.0	Below standard.
11734	Goldsmith Ice Cream Co.....	Terre Haute.....	7.0	Below standard.
11736	Pearl Ice Cream Co.....	Terre Haute.....	6.0	Below standard.
11737	Peter Georgopoulos.....	Terre Haute.....	7.5	Below standard.
11738	W. H. Sage's Sons.....	Terre Haute.....	6.0	Below standard.
11833	Sent in from Talbot.....	.....	3.6	Below standard.
11844	Amos Gipe.....	Wabash.....	6.4	Below standard.
12109	Harmon Conter.....	Decatur.....	5.6	Below standard.
12202	Kokomo Clover Leaf.....	Kokomo.....	8.1	Artificial color.
12170	Indianapolis Creamery.....	Indianapolis.....	4.0	Below standard.
12500	Marion Ice Cream Co.....	Marion.....	7.6	Below standard.
12519	Exmeyer.....	Peru.....	6.4	Below standard.
12674	Thiele Bros.....	Goshen.....	7.6	Below standard.
12771	Ives & Son.....	Newcastle.....	7.2	Below standard.
12762	Joe E. Bender.....	Cambridge City.....	6.0	Below standard.
12763	Joe E. Bender.....	Cambridge City.....	6.4	Below standard.
12782	Kokomo Creamery Co.....	Kokomo.....	6.4	Below standard.
12796	C. J. Renman.....	Crawfordsville.....	3.2	Below standard.
12797	J. A. Tevebaugh.....	Crawfordsville.....	6.0	Below standard.
12818	Sent in from Clay City.....	.....	5.6	Below standard.
12885	Sent in from Kokomo.....	.....	7.8	Below standard.

FLAVORING EXTRACTS—LEMON.

Thirteen of the 24 lemon extracts analyzed were legal and properly labeled. Eight of the 11 illegal samples were sent in by grocers who suspected the character of their old stock and wished to anticipate the visit of the inspector. But three samples of extract of lemon were purchased which were not properly labeled and of full strength. The stock now being placed in the State is entirely satisfactory, both as to the quality of the goods and style of labeling. A small amount of goods labeled one-fourth, three-eighths, and one-half strength is still on hand. The trade is urged not to purchase such a product, as its use is much more expensive to the housewife than if the goods were of full strength and sold at a higher price.

LEMON EXTRACT—LEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Specific Gravity at 20°.	Alcohol by Weight.	Lemon Oil.	Remarks.
9931	Lemon Extract.....	E. C. Harley Co.....	Dayton, Ohio.....	8293	85.6	6.40	Pure.
10045	Lemon Extract.....	G. E. Calloway.....	Cambridge, City.....	8220	88.4	5.56	Pure.
10075	Lemon Extract.....	Boeda Bros.....	Chicago, Ill.....	8432	90.0	6.21	Pure.
10076	Lemon Extract.....	Wm. A. Byron.....	Idaville.....	8310	84.9	5.50	Pure.
10467	Lemon Extract.....	Stearns & Co.....	Indianapolis.....	8207	88.4	6.21	Pure.
11016	Lemon Extract.....	Seider, J.....	Indianapolis.....	8412	86.9	5.71	Pure.
11035	Lemon Extract.....	J. S. Wells.....	Indianapolis.....	8448	87.3	5.19	Pure.
11037	Lemon Extract.....	Milton Wampler.....	Richmond.....	8403	77.6	5.87	Pure.
11577	Lemon Extract.....	Dierle & Co.....	Chicago, Ill.....	8477	78.3	5.80	Pure.
10285	Lemon Extract, 1 per cent. Lemon Oil.....	Gro. Chemical Works.....	Evansville.....	8940	58.7	1.08	Correctly labeled.
10984	Lemon Flavor.....	Sent in from Jeffersonville.....	.....	9493	32.6	.15	Correctly labeled.
11945	Lemon Powder.....	Sent in from Vincennes.....	.....	.....	.....	.....	Finely graded lemon rind, sugar, lemon oil.
12040	Terpenesless Extract.....	Sent in from Indianapolis.....	.....	.....	.....	.....	Citral 0.3 per cent., naphthol yellow color.

LEMON JUICE.

Lab. No.	Article.	Manufacturer.	Address.	Remarks.
11236	Lemon juice.....	Davidson & Son.....	Fowler.....	No saccharin, benzoate or salicylic acid.

LEMON EXTRACT—ILLEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Per Cent. Lemon Oil.	Remarks.
9861	Extract Lemon....	Sent in from Irvington....	.....	1.50	Below standard.
10120	Lemon Flavor....	D. G. Evans & Co.	St. Louis, Mo.	0.00	Mislabeled.
10145	Extract Lemon....	A. Rodeman	Fort Wayne. ....	.37	Mislabeled.
10284	Extract Lemon....	Sent in from Evansville....	.....	.12	Below standard.
10297	Extract Lemon....	Sent in from Dayton....	.....	.31	Below standard.
10322	Extract Lemon....	R. S. Lowerys	Rochester .....	.68	Below standard.
11200	Extract Lemon....	Sent in from Michigan City	.....	.62	Below standard.
12342	Extract Lemon....	Sent in from Fort Wayne	.....	.12	Below standard.
12573	Extract Lemon....	Sent in from Peru. ....	.....	.81	Below standard.
12847	Extract Lemon....	Sent in from Marshfield...	.....	4.93	Artificial color not stated.
12965	Extract Lemon....	Sent in from Fort Wayne..	.....	0.137	Artificial color not stated.

VANILLA EXTRACT.

Twenty-two of the 25 vanilla extracts analyzed were legal and properly labeled. The result of the examination of this class of goods is most gratifying when compared with its character only two years ago, when 72 per cent was adulterated or below standard.

MISCELLANEOUS EXTRACTS.

Fifteen miscellaneous extracts have been analyzed. Eight of these preparations were properly labeled, but seven sent in by one grocer having a large stock of old goods on hand, were below standard in the amount of oil present. The figures on this class of preparations can hardly be applied to the present stock, which is properly labeled and of standard strength.

FLOURS.

Fifteen samples of flours, including wheat flours, gluten flours and buckwheat flours, sent in by bakers and grocers, have been analyzed during the year. The gluten flour contained but 2 per cent more protein than ordinary flour, and could not properly be classed as a gluten flour. The buckwheat flours were all free from the admixture of foreign flours. Several of the wheat flours had evidently been bleached, since in six cases nitrites were present. The sale of bleached flour, when this fact is not made known, is undoubtedly illegal.

VANILLA EXTRACTS—LEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Color.	Lead Acetate Precipitate.	Per Cent. Vanillin.	Coumarin.	Remarks.
10048	Vanilla Extract	G. E. Calloway	Cambridge City	Normal	Heavy	15	None	Pure
10071	Vanilla Extract	Jennings	Grand Rapids	Normal	Heavy	10	None	Pure
10468	Vanilla Extract	Sent in from Indianapolis		Normal	Heavy		None	Pure
10517	Vanilla Extract	Walnut Run Co.	Terre Haute	Normal	Heavy	15	None	Pure
10533	Vanilla Extract	Walnut Baking Powder Co.	Wabash	Normal	Heavy	15	None	Pure
10584	Vanilla Extract	J. A. Tolman	Chicago, Ill.	Normal	Very heavy	15	None	Pure
10624	Vanilla Extract	J. P. Donnell	Danville	Normal	Very heavy	10	None	Pure
11024	Vanilla Extract	J. S. Welch	Bicell	Normal	Heavy	125	None	Pure
11199	Vanilla Extract	Sent in from Michigan City	Deatur, Ill.	Normal	Medium	115	None	Pure
11247	Vanilla Extract	Standard Manufacturing Co.	Valparaiso	Normal	Very heavy	10	None	Pure
11269	Vanilla Extract	Lorenzsch's Department Store		Normal	Medium	144	None	Pure
12767	Vanilla Extract	Sent in from Fort Wayne		Normal	Heavy	125	None	Pure
12844	Vanilla Extract	Sent in from Muncie	Wabash	Normal	Heavy	105	None	Pure
12853	Vanilla Extract	Wabash Baking Powder Co.		Normal	Heavy		None	Pure

Lab.	Article.	Manufacturer or Dealer.	Address.	Color.	Remarks.
10118	Vanilla Flavor	Kerr Bros.	Princeton	Caramel	Vanillin and coumarin. Properly labeled.
10148	Vanil	C. H. Kirchoff		Caramel	Vanillin and coumarin. Properly labeled.
10286	Vanilla Extract	Grocers' Chemical Works	Evansville	Caramel	Vanillin and coumarin. Properly labeled.
10287	Vanilla and Coumarin	Lipp Manufacturing Co.	Cleveland	Caramel	Vanillin and coumarin. Properly labeled.
10412	Vanilla and Tonks	Bakker & Co.	Aurora	Caramel	Vanillin and coumarin. Properly labeled.
10883	Vanilla Flavor	A. H. Hunsley	Jeffersonville	Caramel	Vanillin and coumarin. Properly labeled.
12850	Vanilla and Tonks	Standard Manufacturing Co.	Deatur, Ill.	Caramel	Vanillin and coumarin. Properly labeled.

VANILLA EXTRACTS—ILLEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Color.	Lead Acetate Precipitate.	Per Cent. Vanilla.	Remarks.
9810	Vanilla Extract	Collier & Thompson	Brasil	Caramel	Very slight	0.28	Made from vanillin.
11363	Vanilla Extract	Sent in from Wabash		Caramel	Very slight	1.28	Not genuine vanilla extract.
12343	Vanilla Extract	Sent in from Fort Wayne		Caramel	Medium	0.16	

MISCELLANEOUS EXTRACTS—LEGAL.

Lab No.	Kind.	Manufacturer or Retailer.	Address.	Specific Gravity at 20°C.	Per Cent. Alcohol by Weight.	Per Cent. Oil.	Remarks.
9932	Orange.	E. C. Harley Co.	Dayton, Ohio.	.8254	87.1	5.85	Pure.
10651	Banana.	Souler & Co.	Dayton, Ohio.				Correctly labeled.
10277	Strawberry.	J. H. Crim.	Edwardport.				Correctly labeled.
13964	Strawberry Stock.	Crown Cordial & Extract Co.	New York.				No preservatives.
1579	Anise.	Seely Manufacturing Co.	Detroit, Mich.	.8867	82.7	5.6	Pure.
11840	Cinnamon.	Colonial Manufacturing Co.	Detroit, Mich.			3.2	
12869	Cinnamon.	Sent in from Marshfield.				2.2	
12964	Wedding Cake.	Soulers & Co.	Dayton, Ohio.				

MISCELLANEOUS EXTRACTS—ILLEGAL.

Lab No.	Kind.	Manufacturer or Retailer.	Specific Gravity at 20°C.	Per Cent. Alcohol by Weight.	Color.	Remarks.
12848	Extract Orange.		.8900	79.3	2.45	Below standard.
12864	Extract Wintergreen.	Sent in from Marshfield.			Artificial.	Below standard.
12865	Extract Cloves.	Sent in from Marshfield.			2.4	Below standard.
12867	Extract Almond.	Sent in from Marshfield.			1.4	Below standard.
12868	Extract Nutmeg.	Sent in from Marshfield.			0.4	Below standard.
12870	Extract Celery.	Sent in from Marshfield.			1.8	Below standard.
12871	Extract Peppermint.	Sent in from Marshfield.			2.0	Not official celery seed extract.

FLOURS.

Lab No.	Kind.	Sent in by	Address.	Protein.	Ash.	Moisture.	Ether Extract.	Nitrites.	Remarks.
10689	Buckwheat.	Little Crow Manufacturing Co.	Warsaw.						Pure.
11292	Buckwheat.	Mrs. R. K. Johnson.	Montpelier.						Pure.
11309	Wheat.	Marten, Marten & Co.	New Castle.	13.82	.56				Pure.
11390	Buckwheat.	McKenzie.	Laporte.						Bleached.
11404	Buckwheat.	A. Patterson.	Laporte.	7.00	.80	10.97	1.25	Present.	
11413	Buckwheat.	John S. Minick.	Laporte.					Present.	
11462	Buckwheat.	L. A. Jackson.	Indianapolis.					Present.	Pure.
11719	Wheat.	Henry & Kerr.	Bloomington.	12.93		10.89	1.43	Present.	
11909	Gluten.	Edward Finn.	Michigan City.	14.61					
11910	Wheat.	Hollowell & Wilkinson.	Michigan City.	13.91					
12015	Wheat.	Chas. Cristadoro.	Bushville.	12.95	.47	10.68		Present.	Bleached.
12117	Wheat.	Chas. Cristadoro.	Point Loma, Cal.	13.07					
12118	Wheat.	Chas. Cristadoro.	Point Loma, Cal.	11.37					
12119	Wheat.	Chas. Cristadoro.	Point Loma, Cal.	12.60					
12586	Wheat.	R. Cunningham.	Muncie.	12.42	.54	10.08		Present.	

FRUIT AND VEGETABLE PRODUCTS.

Occasional samples of canned and prepared fruit and vegetable products have been analyzed during the year. For the most part these goods are properly labeled and contained no preservatives, bleach or other injurious or illegal ingredient. The tables following show clearly the character of the goods analyzed.

CIDER—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
9946	Orange cider.....	Vaughn & Casey, Crawfordsville.....	Properly labeled.
10395	Apple cider.....	Vickery Bros., Evansville.....	Properly labeled.
10475	Orange cider.....	John H. Randal, Monticello.....	Properly labeled.
10763	Apple cider.....	Price & Lucas, Louisville, Ky.....	Properly labeled.
10947	Apple cider.....	Matt, New York.....	Properly labeled.

CIDER—ILLEGAL.

11214	Apple cider.....	Matt, Chicago.....	Not properly labeled.
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JELLY—LEGAL.

11176	Apple.....	W. D. Huffman Co., Indianapolis.....	Properly labeled.
11682	Plum flavor.....	Sent in from Indianapolis.....	Properly labeled.
11683	Blackberry flavor.....	Sent in from Indianapolis.....	Properly labeled.
11684	Grape flavor.....	Sent in from Indianapolis.....	Properly labeled.
11685	Raspberry flavor.....	Sent in from Indianapolis.....	Properly labeled.
11686	Strawberry flavor.....	Sent in from Indianapolis.....	Properly labeled.
11687	Apple flavor.....	Sent in from Indianapolis.....	Properly labeled.
11688	Currant flavor.....	Sent in from Indianapolis.....	Properly labeled.

JELLY—ILLEGAL.

12070	Solidified Table Jelly.	E. Lazenby, London, Eng.....	Salicylic acid present.
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SAUER KRAUT—LEGAL.

Lab. No.	Address.	Boron Compounds.	Sulphurous Acid.
11573	Sent in from Muncie.....	None.....	None.

SAUER KRAUT—ILLEGAL.

11571	Sent in from Muncie.....	Present.....	Absent.
11572	Sent in from Muncie.....	Present.....	Absent.

CATSUP—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
10908	Catsup.....	J. M. Jennings, North Manchester.....	Properly labeled.
10911	Tip Top.....	Tip Top Catsup Co., Cincinnati, Ohio.....	Properly labeled.
11023	Imperial.....	Franklin McVeagh Co., Chicago, Ill.....	Properly labeled.

CATSUP—ILLEGAL.

8271	Ketchup.....	Wm. Glase & Son, Dayton Ohio.....	Not properly labeled.
9657	Gold Coin.....	National Spice and Mustard Co., Dayton, Ohio.....	Saccharin present; not properly labeled.
10144	Standard.....	Exley Watkins & Co., Wheeling, W. Va.....	Not properly labeled.
10619	Catsup.....	R. S. Lowery, Rochester.....	Coal tar color; benzoate.
11234	Catsup.....	Price & Lucas, Louisville, Ky.....	Not properly labeled.

CANNED GOODS.

Lab. No.	Kind.	Packer or Retailer.	Remarks.
10336	Corn.....	Franklin Canning Co., Franklin.....	Pure.
10673	Corn.....	Franklin McVeagh & Co., Chicago, Ill.....	Pure.
10729	Pears.....	Empson Packing Co., Longmount, Colo.....	Pure.
10730	Pears.....	Empson Packing Co., Longmount, Colo.....	Pure.
10731	Pears.....	Empson Packing Co., Longmount, Colo.....	Pure.
10838	Mushrooms.....	Pierson Bros., Danville.....	Pure.
10855	Fork and beans.....	Smith Bros., Gosport.....	Pure.
11554	Apples.....	Bessire & Co., Indianapolis.....	Pure.
8266	Oysters.....	Anderson R. Garrett, Mechanicsburg.....	Pure.

APPLE BUTTER—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Remarks.
10317	C. A. Kilmer.....	Rochester.....	Pure.
10639	E. M. Allen.....	Spencer.....	Correctly labeled.
10833	Hulman & Co.....	Terre Haute.....	Correctly labeled.
10844	Hulman & Co.....	Terre Haute.....	Pure.

APPLE BUTTER—ILLEGAL.

11490	Ed E. Tiedeman.....	Goshen.....	Preservative not stated.
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SODA FOUNTAIN PRODUCTS.

The trade in crushed fruits, syrups and miscellaneous soda preparations has assumed large proportions in recent years. These goods are prepared to meet the demands of the soda water dispenser, and have usually contained sufficient preservative to enable them to be kept in stock indefinitely without spoiling. Crushed

fruits and soda fountain preparations are usually labeled "Sodium Benzoate present," and when so labeled their sale has not been stopped. The use of saccharin is illegal and in a few instances where it has been present in soda waters and miscellaneous soda preparations, dealers have been advised to discontinue the sale of the goods.

CRUSHED FRUITS—LEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Salicylic Acid.	Benzoic Acid.	Saccharin.
11999	Crushed Cherry.....			None.....	None.....	None.
12000	Crushed Pineapple.....			None.....	None.....	None.
12743	Cherries.....	Chicago Concentration Co.	Chicago.....	None.....	Present...	None.
12745	Pineapple.....	Sipe & Sipe.....	New York.....	None.....	Present...	None.

CRUSHED FRUITS—ILLEGAL.

11998	Crush'd Strawberry.....			Present...	None.....	None.
12741	Pineapple.....	A. Seidel & Co.....	Chicago.....	Present...	None.....	None.
12742	Cherries.....	A. Seidel & Co.....	Chicago.....	None.....	Present...	None.
12744	Strawberry.....	Cincinnati Extract Co....	Cincinnati.....	None.....	Present...	None.

SODA FOUNTAIN SYRUPS.

Lab. No.	Article.	Manufacturer or Retailer.	Address.	Saccharin.	Salicylic Acid.	Benzoates.
11550	Soda Syrup.....	Hogan & Dodd.....	Atlanta, Ga.....	None.....	None.....	Present.
11947	Sherbet.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11948	Mead.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11949	Maple.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11950	Root Beer.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11951	Bananas.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11952	Lemon.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11953	Vanilla.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.
11954	Pineapple.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	Present.
11955	Strawberry.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	Present.
11956	Raspberry.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	Present.
11957	Wild Cherry.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	Present.
11958	Cherry.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	Present.
11959	Pineapple.....	F. G. Harlacher.....	Monticello.....	None.....	None.....	None.

SODA WATERS—LEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Remarks.
9676	Ginger Ale.....	Klee & Coleman, Indianapolis.....	
9739	Soda.....	Bottling Works, Sullivan.....	
9740	Soda.....	Bottling Works, Sullivan.....	
9741	Soda.....	Bottling Works, Sullivan.....	
9742	Soda.....	Bottling Works, Sullivan.....	
9743	Soda.....	Bottling Works, Sullivan.....	
10542	Orange Soda.....	Klee & Coleman, Indianapolis.....	
10543	Orange Soda.....	Klee & Coleman, Indianapolis.....	
12618	Orange Soda.....	Howell Bottling Co., Lafayette.....	

SODA WATERS—ILLEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Remarks.
10181	Ginger Ale.....	J. M. Hawkins, Anderson.....	Saccharin present.
12353	Summer Drink.....	E. D. Thomas, Muncie.....	Saccharin present.
12617	Buck Soda.....	Howell Bottling Co., Lafayette.....	Coal tar color.
12620	Wild Cherry Phosphate.....	Monticello Bottling Works, Monticello.....	Coal tar color.
12834	Orangade Phosphate.....	S. S. Kresge, Indianapolis.....	Coal tar color.
12051	Jack Frost Soda.....	Hogan & Dodd, Atlanta, Ga.....	Mislabeled.
13050	Jack Frost Soda.....	Hogan & Dodd, Atlanta, Ga.....	Mislabeled.

MISCELLANEOUS SODA PREPARATIONS.

10646	Soda Water Powder.....	W. H. Berry, Spencer.....	No saccharin.
11050	Orange Sugar.....	O. H. Specker, Jasonville.....	Saccharin present.
12576	Orange Sugar.....	J. H. Dunn, South Bend.....	Coal tar color; citric acid.
11806	Cheree.....	Gilbert Hurty, Indianapolis.....	Coal tar color; no preservatives.

SACCHARINE PRODUCTS—MAPLE SUGAR, SYRUPS, HONEYS, ETC.

Of the six maple sugars analyzed two were legal and four illegal products. Three of the four illegal products were sent in to the laboratory and were evidently old goods. In one case the dealer was found to be handling maple sugar cakes which were largely composed of cane sugar.

MAPLE SUGAR—LEGAL.

Lab. No.	Manufacturer or Retailer.	Polarization, Direct.	Polarization, Invert.	Ash, Total.	Ash, Soluble.	Ash, Insoluble.	Sucrose.	Remarks.
11597	Sent in from Greensburg.....	+86.6	-29.7	1.10	.79	.31	88.1	.....
11758	Welch Bros., Burlington, Vt.....	+80.2	-30.1	.84	.44	.40	82.3	.....

MAPLE SUGAR—ILLEGAL.

10634	Sent in from Washington, Ind....	+79.0	-30.8	.31	.27	.04	83.1	About 50 per cent. cane sugar.
11469	Sent in from Indianapolis.....	+85.2	-22.4	.19	.12	.07	81.5	Largely cane sugar.
11900	Sent in from Kirkhoff.....	+91.4	-21.2	.21	.08	.13	84.6	Largely cane sugar.
11904	John Kohl, Lafayette.....	+86.0	-26.0	.22	.05	.17	84.2	Largely cane sugar.

MAPLE SYRUP.

Thirty-one of the 40 maple syrups analyzed were pure. Nine of the samples were largely cane sugar, although the label bore no mention of that fact. With the exception of a small quantity of old stock, the maple syrup products can now be depended upon to be true to name.

MAPLE SYRUPS—LEGAL.

Lab. No.	Manufacturer or Retailer.	Direct Polarisation.	Invert Polarisation.	Total Ash.	Soluble Ash.	Insoluble Ash.	Total Alkalinity.	Soluble Alkalinity.	Insoluble Alkalinity.	Sucrose.	Lead Acetate Precipitate.
10192	P. N. Hornaday, North Manchester, Ind.	+40.8	-19.6	.87	.51	.36	1.36	.68	.68	37.77	Heavy.
10331	Dugger & Co., Dugger, Ind.	+72.8	-25.6	1.28	.77	.51				74.5	
10890	Webb Bros., Burlington, Vt.	+60.8	-23.8	.43	.32	.11				64.5	
11080	Sent in from Indianapolis	+55.8	-19.8	.61	.40	.21				57.7	
11474	Sent in from Martinsville	+30.0	-24.2	.77						40.88	
11547	Hall Bros., Vincennes	+56.4	-20.0	.55	.31	.24				56.2	
11567	Sent in from Mooresville	+59.4	-19.8	.55	.32	.23				60.4	
11619	Sent in from Indianapolis	+58.4	-18.0	.61	.41	.20				58.3	
11676	Frank Kelly, Indianapolis	+64.0	-19.5	.67	.53	.15				66.2	
11678	Theo. Johnson, Rochester	+63.2	-23.5	.84	.68	.16				66.6	
11681	Sent in from Bedford			.63		.18					
11689	P. A. Thomas, Frankfort	+61.5	-22.8	.63	.44	.18				63.8	
11695	Alte Meyers, Peru	+59.4	-21.5	.61	.43	.18				61.2	
11696	Hines Bros., Peru	+59.8	-23.3	.61	.43	.18				63.2	
11697	Mr. Morris, Roann	+57.6	-22.6	.60	.47	.13				60.7	
11698	Louis Little, Peru	+56.8	-19.8	.64	.33	.32				58.0	
11718	Sent in from Seymour	+54.0	-20.4	.57	.30	.27				56.4	
11721	Farmar, Dayton, Ind.	+64.4	-20.9	.65	.51	.14				64.6	
11755	Sent in from Columbus	+48.4	-22.4	.88	.56	.32				53.6	
11764	Sent in from Indianapolis	+63.4	-22.2	.87	.71	.16				63.1	
11781	Sent in from Warsaw	+62.4	-22.8	.83	.46	.37				65.7	
11822	Sent in from South Bend	+63.4	-20.8	.64	.36	.28				66.1	
11823	Sent in from Indianapolis	+66.0	-22.0	.57	.43	.14				63.4	
11833	Mr. Crabb, Bedford	+63.0	-31.4	.75			2.3	1.2	1.1	63.4	
11868	Mr. J. Dyer, Warsaw	+65.8	-32.0	.70			2.6	1.4	1.1	66.9	
11918	C. P. Crawford, Terra Haute	+67.8	-22.0	.66			2.2	1.2	1.0	63.1	
11919	C. E. Adams, Seymour	+67.4	-20.9	.69			2.2	1.2	0.9	63.8	
11920	Farmar, South Bend	+61.0	-20.9	.75			2.4	1.1	1.3	61.7	
11921	Sent in from Glenwood	+63.0	-23.3	.66			2.03	.95	1.1	64.6	
12016	Geo. A. Harmon, Warsaw	+70.2	-23.8	.70			2.55	1.4	1.15	71.3	
12071	Sent in from Ft. Wayne	+61.8	-18.7	.59			1.95	.75	1.00	69.9	
12072											

MAPLE SYRUPS—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Direct Polarization.	Invert Polarization.	Total Ash.	Soluble Ash.	Insoluble Ash.	Total Alkalinity.	Soluble Alkalinity.	Insoluble Alkalinity.	Sucrose.	Remarks.
9238	Williams Bros., Detroit, Mich.	+45.0	-21.6	15	.09	.06	.22	.10	.12	38.92	Invert sugar.
10787	John N. Wondart, Terre Haute	+76.2	+24.6	.22	.17	.05	.....	.....	.....	20.2	25 per cent.
10882	Perce A. Lucas, Louisville.	+63.3	-20.9	.13	.09	.04	.....	.....	.....	64.2	Largely cane syrup.
11098	C. M. Lee, Boston.	+57.0	-17.2	.34	.23	.11	.....	.....	.....	58.7	Not pure maple.
11227	Wm. Rennie, Fowler.	+61.9	-18.7	.63	.62	.01	.....	.....	.....	61.2	Cane sugar syrup.
11267	Sent in from Larson.	+50.8	-15.9	.03	.18	.01	.....	.....	.....	50.8	Adulterated.
11323	Ohio Western Reserve	+43.1	-18.7	.19	.12	.04	.....	.....	.....	47.1	Not pure maple.
11363	J. W. Wondart, Terre Haute	+36.4	-22.8	.13	.....	.....	.....	.3	.4	68.5	Largely cane sugar.
11996	Sent in from Kokomo	+62.2	-22.8	.37	.....	.....	1.85	.75	1.1	63.9	

HONEY.

All of the 12 honeys analyzed were pure products, free from the addition of invert sugars, cane sugar or glucose.

HONEY—LEGAL.

Lab. No.	Manufacturer or Retailer.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Total Ash.	Invert Sugar.	Free Acid as Formic.
10397	Sent in from Indianapolis.....	-15.2	-22.0	5.10	.....	.....	.....
10645	W. H. Berry, Spencer.....	-16.8	-23.1	4.76	.062	73.82	.1032
10780	Geo. Dye, Lyons.....	-16.4	-17.4	.....	.126	.....	.....
10854	Jones & Co., Brazil.....	-15.0	-18.0	.....	.07	.....	.....
11025	Kirmiller & Co.....	-13.6	-19.0	.....	.102	.....	.....
11080	J. L. Donaldson, Bicknell.....	-16.8	-20.0	.....	.099	.....	.....
11323	Stephen A. Kennedy, Lebanon.....	-18.0	-20.8	.....	.067	.....	.....
11334	E. A. Shepard & Co., Lebanon.....	-18.0	-19.6	.....	.100	.....	.....
11524	National Gro. Co., South Bend.....	-10.4	-18.4	.....	.022	.....	.....
11758	Farmer near Indianapolis.....	-14.8	-18.7	.....	.062	.....	.....
12879	Sent in from Indianapolis.....	-11.0	-14.7	.....	.216	.....	.....

SUGAR.

Five powdered sugar samples were analyzed, and in every instance found to be pure. Four of these samples were sent in by suspicious consumers. There is no basis for the common belief that powdered sugar is heavily adulterated.

SUGAR—LEGAL.

Lab. No.	Article.	Manufacturer or Retailer.	Remarks.
9990	Powdered sugar.....	Frank Vangilder, Plymouth.....	Pure.
9995	Powdered sugar.....	Sent in from Peru.....	Pure.
11774	Powdered sugar.....	Sent in from Indianapolis.....	Pure.
11555	Powdered sugar.....	Sent in from Indianapolis.....	Pure.
12042	Powdered sugar.....	Sent in from Kokomo.....	Pure.

SYRUPS.

Fifteen samples of sorghum, simple syrups and molasses have been analyzed. Two cane syrups were found to consist largely of glucose and several of the molasses samples contained an excess of sulphurous acid.

SYRUPS—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Reducing Sugars.
9625	Sorghum and corn syrup.....	Anthony Friss, Brazil.....	+ 77.6	+ 66.8	8.17	39.67
10920	Simple Syrup.....	Badger & Green, Greencastle.....	.....	.....	64.96	.....
11472	Phoenix.....	Schnull & Co., Indianapolis.....	.....	.....	.....	.....
11503*	New Orleans.....	M. Shookman, Gosben.....	+ 18.	-12.9	23.37	.....

*Pure, but low grade.

SYRUPS—LEGAL—Continued.

Lab. No.	Orleans, From the South.	Per Cent. Sulphur Dioxid.
10948	501.....	.01700
	504.....	.07616
	515.....	.00435
	518.....	.01514
	520.....	.00543
	92.....	.05197
	93.....	.04984
	95.....	.11520
	96.....	.15104

SYRUPS—ILLEGAL.

Lab. No.	Kind.	Manufacturer.	Polarisation.		Ash.		
			Direct.	Invert.	Total.	Soluble.	Insoluble.
9934	Cane Syrup.....	E. C. Harley Co., Dayton.....	+ 175.6	152.6	.68	.54	.14

Lab. No.	Kind.	Manufacturer.	Alkalinity.			Sucrose
			Total.	Soluble.	Insoluble.	
9934	Cane Syrup.....	E. C. Harley Co., Dayton.....	.46	.22	.24	13.4

Lab. No.	Kind.	Where From.	Remarks.
10399	Cane Syrup.....	Sent in from Richmond	Sucrose, 32.01 per cent. Glucose, 22.30 per cent.

LEAVENING AGENTS.

Seven of the 10 baking powders and sodas analyzed were pure product. One sample which fell short in available carbon-dioxid content was evidently an old deteriorated powder. Two other samples analyzed were labeled "double strength," but were found to be ordinary full strength goods and could legally have been sold under the proper name. Twenty-nine of the 35 cream of tartars analyzed were pure. Six samples were adulterated with alum and starch, and one sample contained saccharin.

BAKING POWDER—LEGAL.

Lab. No.	Manufacturer.	Address.	Per Cent. Available CO ₂ .
9980	B. O. Harley Co.....	Dayton.....	10.5
9939	J. H. Walker.....	Rockport.....	10.9
10933	Dr. Price's.....	Chicago.....	11.84
11201	Sent in from Michigan City.....		12.10

BAKING SODA—LEGAL.

Lab. No.	Manufacturer.	Address.	Remarks.
9928	E. C. Harley Co.	Dayton	99.8 per cent. pure.
10544	W. H. Berry	Spencer	99.7 per cent. pure.
12076	Sent in from Indianapolis.		98.7 per cent. pure.

BAKING POWDER—ILLEGAL.

Lab. No.	Manufacturer.	Per Cent. Available CO ₂ .	Remarks.
8838	Sent in from Columbus.	9.06	An old powder.
10453	Wabash Baking Powder Co., Wabash.	12.80	Labeled double strength.
11164	Sent in from Warsaw.	11.64	Mislabeled.

CREAM TARTAR—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Per Cent. Purity.
8586	Ralph Hill	Delphi	97
8857	Will Wets	Columbus	97
9068	I. J. Rich	Washington	97
9228	L. M. Davis	Marengo	96.7
9790	Brodbeck Bros.	South Bend	96
9865	A. C. Pilkenton	Greenfield	97
9911	N. Reeves	Knightstown	97
9989	Frank Vongelder	Plymouth	97
10057	E. R. Durkee & Co.	New York	97
10444	Heekin Spice Co.	Cincinnati, Ohio	97
10636	Jas. W. Egnor	Spencer	97
10656	Mills & Brown	Martinsville	97
10661	Beames & Hobson	Martinsville	96
10666	Joseph M. Frye	Martinsville	96
10667	Otto C. Toner	Martinsville	96
10669	Josiah G. Swain	Martinsville	96
10606	Geo. W. Friday	Idaville	96
10636	John A. Krider	Brasil	97
10656	Geo. W. Oswalt	Brasil	96
10668	Sent in from Indianapolis.		97
10929	Chas. E. Edwards	Danville	96
10951	John Soth	Gosport	97
11056	Jessup & Hicks	Freedom	97
11067	D. H. Slinkard	Newberry	96
11233	Jno. G. Timmens & Co.	Rockfield	99
11495	Ed. Jacobs	Goshen	99
11512	W. W. Poyser	Goshen	99
11517	A. Holtzinger	Goshen	99
11529	J. S. Openheim	Goshen	96

CREAM TARTAR—ILLEGAL.

Lab. No.	Retailer.	Address.	Per Cent. Purity.	Remarks.
8280	Barnhill, Hornaday & Pickett	Crawfordsville	92.0	Alum and starch present.
8539	F. L. Sheriday	Attica	96.0	Alum and starch present.
8940	Sent in from Columbus		99.5	Alum and starch present.
10660	B. E. Lewis	Martinsville	79.0	Alum and saccharin present.
10830	Joe Lankford	Clay City	73.0	Alum, starch, tartaric acid
11207	Provident Chemical Works	St. Louis	65.3	Starch; moisture 2.38.

MEAT PRODUCTS.

The meat products analyzed during the year have been very largely free from adulteration. The use of preservatives has been almost entirely abandoned, and only occasionally is a dealer found who resorts to preservatives as a substitute for refrigeration.

Of the 19 samples of hamburger steak analyzed two were preserved with sulphurous acid.

HAMBURGER STEAK—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address.
10039	J. Meyers	Cambridge City.
10362	Hoffer Bros	Muncie.
10385	C. Bromm	Evansville.
10391	Yokel & Son	Evansville.
10441	H. Ganister	Albany.
10448	J. W. Webster	Dunkirk.
10577	Batchelder & May	Tipton.
10580	Moore & Surface	Tipton.
10588	J. P. Bireley	Kokomo.
10738	Maher & Hadley	Richmond.
10768	Black & Thorpe	Warren.
10816	J. E. Shaw	Shelbyville.
10833	Francis Gamster	Farmland.
11190	Donelson & Broderick	Upland.
11192	Lugor Bros. & Co.	Van Buren.
13055	Liskauf Packing Co.	Ft. Wayne.
13765	Ben. Parson	Cambridge City.

HAMBURGER STEAK—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Remarks.
10878	Henry Kammerling	Greensburg	Sulphites present.
10880	George Menzie	Greensburg	Sulphites present.

MINCE MEAT—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address.
10448	R. M. Brotherson	Dunkirk.
10426	Berden & Co.	Toledo, Ohio.
10665	Armour Co.	Chicago.
10629	Bement, Rea & Co.	Terre Haute.

LARD.

Eighty-five of the 90 samples of lard analyzed were pure. In five cases beef fat was present, although not declared on the label. This is a great improvement over last year, when 50 per cent of the samples contained cottonseed oil, beet fat, or other stiffening agents.

LARD—LEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Butyro Reading at 40° C.	Halphen Test for Cottonseed Oil.	Beef Fat.
9982	Trader Palace Grocery	Plymouth	49.6	Negative..	Absent.
9988	C. Oscar Tribberry	Plymouth	49.7	Negative..	Absent.
9994			48.9	Negative..	Absent.
9998	W. R. Crowder	Plymouth	48.7	Negative..	Absent.
10064	S. Hunziker	Michigan City	50.2	Negative..	Absent.
10066	W. J. Shafering	Michigan City	49.4	Negative..	Absent.
10074	O. A. Wellnits	Michigan City	50.1		
10076	O. E. Keadling	Michigan City	50.3		
10128	Smith & Riggs	Princeton	49.5		
10135	C. W. Covey	Princeton	50.0		
10137	Louis Salsman	Princeton	49.5		
10140	M. Tibbet	Princeton	50.7		
10289	Vicery Bros	Evansville	50.2		
10293	Jno. Harrigan	Evansville	50.3		
10296	John Fols	Evansville	49.6		
10301	L. E. Downie	Rochester	49.6		
10311	F. Marsh	Rochester	49.1		
10315	C. A. Kilmer	Rochester	50.4		
10323	R. S. Lowery	Rochester	49.8		
10390	Geo. Egan	Evansville	50.1		
10392	Dowdistel	Evansville	50.15		
10476	Cowell & Knox	Clay City	50.0		
10481	Jose Newson & Son	Columbus	49.2		
10486	A. G. Mohr	Clifford	50.6		
10539	C. A. O'Donnell	Vincennes	50.0		
10616	Enurick & Madden	Churubusco	49.7		
10620	Slugel & Son	Churubusco	50.0		
10625	C. H. Long	Churubusco	49.6		
10672	Fraser & Co.	Monticello	50.2		
10674	Chas. W. Davis	Monticello	50.2		
10680	Zink & Christy	Monticello	50.0		
10689	Watkins & Son	Monticello	49.2		
10747	Wm. Dowling	Kentland	49.4		
10750	Chas. Schneider	Kentland	49.2		
10757	Montgomery & LeMaster	Goodland	50.0		
10760	Peter Buch	Goodland	50.1		
10900	J. M. Jennings	North Manchester	49.3		
10901	L. A. Sandoz	North Manchester	49.5		
10913	Hathaway & Son	Winamac	49.8		
10915	Keplar	Winamac	49.5		
10984	Grimes Bros.	Union City	50.1		
10994	Ed. Mitchells	Angola	49.5		
10996	Silas Bressler	Angola	49.5		
10997	J. F. Graso	Angola	49.6		
11002	Must Bros.	Angola	49.0		
11012	W. L. Braun	Angola	49.2		
11018	Frank Huff	Auburn	50.4		
11019	J. W. Sheffer	Auburn	49.8		
11021	Brown & Husselman	Auburn	49.8		
11106	F. A. M. Aibaugh	Liberty	50.05		
11156	Alfred Gusherts	Warsaw	49.6		
11160	Evans & Hackman	Warsaw	49.8		
11163	Jas. Allegor	Warsaw	49.3		
11165	Arthur Levy	Warsaw	49.7		
11168	H. T. Cline	Warsaw	49.7		
11281	Robt. B. Wark	Valparaiso	50.0		
11284	Herriek & Herriek	Valparaiso	50.1		
11287	W. G. Windle	Valparaiso	50.7		
11297	Lowentime's Department Store	Valparaiso	50.6		
11388	E. C. Hall & Bro.	Laporte	49.0		
11394	Frank B. Heust	Laporte	49.5		
11400	A. Patterson	Laporte	50.1		
11406	B. W. Grandstaff	Laporte	50.0		
11411	John S. Minich	Laporte	50.2		
11417	Roloff & Garwood	Laporte	50.1		
11471	L. A. Jackson	Indianapolis	49.5		
11485	A. E. Wysoog	Goesben	48.6		
11488	Ed. E. Tredmann	Goesben	48.7		
11494	Ed. Jacobs	Goesben	49.5		
11498	M. Shookman & Son	Goesben	50.4		
11504	Gallinger Bros	Goesben	49.0		
11513	A. Holtzinger	Goesben	50.0		
11521	J. G. Openheim	Goesben	49.3		
11594	Link & Christy	Monticello	49.8		
11617	Sent in from Richmond		50.1		

LARD—LEGAL—Continued.

Lab. No.	Manufacturer or Retailer.	Address.	Butyro Reading at 40° C.	Halphen Test for Cottonseed Oil.	Beef Fat.
11918	Valentine	Terre Haute	49.8	.....	.....
12003	Sent in from Indianapolis .....	.....	49.2	.....	.....
12102	Decatur Packing Co.	Decatur	50.2	.....	.....
12103	Sim Hain	Decatur	50.0	.....	.....
12104	True & Runyan	Decatur	49.4	.....	.....
12105	Dyonas Schmitt	Decatur	51.0	.....	.....
12106	Frank Lichtle	Decatur	50.0	.....	.....
12107	Fred V. Mills	Decatur	49.8	.....	.....
12108	Kubler & Malts	Decatur	50.0	.....	.....
12350	Sent in from National Military Home.	Indiana	51.0	.....	.....

LARD—ILLEGAL.

10078	R. A. Ebert	Michigan City	48.3	Negative	Present.
10130	Miller & Hart	Chicago, Ill.	48.3	Negative	Present.
10298	J. F. Kepeler	Rochester	53.8	40 per cent.	Present.
12101	Evert & Hite	Decatur	48.8	Negative	Present.
12183	Sent in from Ft. Wayne .....	.....	52.9	30 per cent.	Absent.

SAUSAGE.

One hundred and eighteen of the 123 samples of sausage examined during the year were pure. Two samples of pork sausage contained beef, two were preserved with sulphites and one contained borax.

SAUSAGES—LEGAL.

Lab. No.	Manufacturer or Retailer.	Lab. No.	Manufacturer or Retailer.
9987	C. Oscar Tribby, Plymouth.	10418	O. J. Sloan, Indianapolis.
9999	W. R. Crowder, Plymouth.	10434	Chas. Ritter, Hartford City.
10036	H. A. Compton, New Castle.	10435	Frank Wilson, Hartford City.
10038	J. Meyers, Cambridge City.	10436	Mike Sauer, Hartford City.
10067	W. J. Shaffering, Michigan City.	10437	Geo. Rapp, Hartford City.
10077	O. E. Keading, Michigan City.	10438	Jas. Keller, Montpelier.
10080	R. A. Ebert, Michigan City.	10439	F. Hedges, Montpelier.
10134	C. W. Corey, Princeton.	10440	H. Ganister, Albany.
10141	M. Tibbet, Princeton.	10442	Henry Daniels, Redkey.
10163	Geo. Hadley, Anderson.	10443	Chas. Geisler, Redkey.
10164	Striker Bros., Anderson.	10447	R. M. Brotherton, Dunkirk.
10167	W. J. Whyte, Anderson.	10450	Davis & Spink, Dunkirk.
10174	G. W. Hadley, Anderson.	10451	Ora Sanders, Middletown.
10175	Goff Bros., Anderson.	10452	B. E. Goff & Son, Middletown.
10178	Joe Phillips, Anderson.	10546	Ed Eckman, Portland.
10179	Joe Phillips, Anderson.	10547	Wm. A. Humphries, Portland.
10180	Masters & Shackelford, Anderson.	10548	Darrah & Hoover, Portland.
10246	C. L. Coppock, Jonesboro.	10549	Ramsey & Son, Portland.
10262	Dentkin & Mathias, Van Buren.	10550	Debolt & Robinson, Portland.
10263	J. E. Matchett, Swayzee.	10551	Chas. A. Havilan, Geneva.
10279	Heffner & Dobeson, Summitville.	10552	Amos Ellenberger, Berne.
10280	V. R. Love, Summitville.	10553	Chas. Tremp, Berne.
10281	Marshall & Schaffer, Summitville.	10564	Deck Bros., Noblesville.
10288	Julius Newman, Evansville.	10565	Ora Garrison, Noblesville.
10294	John Fols, Evansville.	10566	W. R. Lyon, Noblesville.
10361	Hoffer Bros., Muncie.	10567	Tom B. Sohl, Noblesville.
10362	Kuhner & Co., Muncie.	10570	Decatur Packing Co., Decatur.
10363	I. Benzenbower, Muncie.	10572	J. Wilson, Arcadia.
10364	Topp & Moore, Muncie.	10573	W. Smalley, Cicero.
10365	Ed Goebel & Co., Muncie.	10574	A. Worm, Indianapolis.
10366	Geo. W. Palmer, Muncie.	10576	Chas. Beck, Tipton.
10386	Evansville Packing Co., Evansville.	10578	Batchelor & May, Tipton.
10387	Schmadel, Evansville.	10579	Moore & Surface, Tipton.
10415	Court House Grocery, Indianapolis.	10584	Walter Ervington, Kokomo.

SAUSAGE—LEGAL—Continued.

Lab. No.	Manufacturer or Dealer.	Lab. No.	Manufacturer or Dealer.
10585	Swift & Co., Chicago.	10879	Link & Bobrink, Greensburg.
10586	W. H. Keck, Kokomo.	10884	J. C. Bates, Winchester.
10587	McKee & Rule, Kokomo.	10914	Hathaway & Son, Winamac.
10589	Dan Kurtz, Alexandria.	10916	Keplar, Winamac.
10590	Jno. O'Bryant, Alexandria.	11082	Sent in from Madison.
10621	Slagel & Son, Churubusco.	11094	Hugh Banks, Morristown.
10728	Conrad Bowers, Indianapolis.	11095	Harry Kramer, Rushville.
10734	W. A. Bragg, Milton.	11099	Frank Hull, Connersville.
10735	Geo. Schroegman, Richmond.	11100	Koch & Ringloff, Connersville.
10736	Andrew Renk, Richmond.	11101	W. H. McKenna, Connersville.
10737	J. Scholl, Richmond.	11102	Anthony Stall, Brookville.
10738	Maher & Hadley, Richmond.	11103	Wm. Burkhardt, Brookville.
10741	Mrs. M. Johnson, Indianapolis.	11104	F. A. Mailbaugh, Liberty.
10745	Wm. Dowling, Kentland.	11106	Jas. C. Rose, Liberty.
10748	Chas. Schneider, Kentland.	11189	Donelson & Broderick, Upland.
10756	Montgomery & LeMaster, Goodland.	11191	Lugor Bros. & Co., Van Buren.
10764	Painter & Farling, Bluffton.	11193	J. E. Matchett, Swaysee.
10765	S. H. Church, Bluffton.	11194	C. L. Coppock, Jonesboro.
10767	C. C. Hadley, Bluffton.	11195	Frank King, Jonesboro.
10769	Black & Thorp, Warren.	11196	Hill Bros., Fairmount.
10770	Campbell Bros., Warren.	11197	R. Frits & Son, Fairmount.
10771	D. Peck, Eaton.	11198	Heffner & Co., Summitville.
10817	C. S. Reincke, Shelbyville.	11483	Geo. Sanders & Son, Greentown.
10821	I. H. Beeson, Carmel.	12552	Thomas Sohl, Noblesville.
10877	McConnack & Richey, Greensburg.	12697	Ruth & Co., Fort Wayne.

SAUSAGES—ILLEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
10410	Pork sausage.....	T. J. Sloan, Indianapolis.....	Beef present.
10416	Sausage.....	Court House Grocery, Indianapolis.....	Beef present.
10881	Pan sausage.....	Geo. Mensie, Greensburg.....	Sulphites present.
12027	Pork sausage.....	Harry Matske, Indianapolis.....	Sulphites present.
10766	Pork Sausage.....	Chas. Kaltwasser, Bluffton.....	Boron compound present.

SMOKED MEATS.

Of the 35 smoked meats such as bacon, bologna, ham, etc., one sample only was adulterated. In this case borax was used as a preservative.

SMOKED MEATS—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Address.
10316	Bacon.....	C. A. Kilmer.....	Rochester.
10899	Bacon.....	J. M. Jennings.....	North Manchester.
10902	Bacon.....	L. A. Landos.....	North Manchester.
10000	Bologna.....	W. R. Crowder.....	Plymouth.
10182	Bologna.....	John Kalberer.....	Lafayette.
10328	Bologna.....	John B. Lurer.....	Vincennes.
10545	Bologna.....	Stephenson Bros.....	Portland.
12701	Bologna.....	O. J. Tillett.....	Peru.
12709	Bologna.....	Swift & Co.....	Chicago.
10186	Ham.....	W. J. Whyte.....	Anderson.
10177	Ham.....	L. Wickel.....	Anderson.
10299	Ham.....	— Keplar.....	Rochester.
10624	Ham.....	C. H. Long.....	Churubusco.
10671	Ham.....	Fraser & Co.....	Monticello.
10681	Ham.....	Line & Christy.....	Monticello.
10686	Ham.....	Watkins & Son.....	Monticello.
10746	Ham.....	Wm. Dowling.....	Kentland.
10749	Ham.....	Chas. Schneider.....	Kentland.
10761	Ham.....	Peter Buch.....	Goodland.
12549	Ham.....	Kingan & Co.....	Indianapolis.

SMOKED MEATS—LEGAL—Continued.

Lab. No.	Kind.	Manufacturer or Retailer.	Address.
12550	Boiled ham	Indianapolis Abattoir Co.	Indianapolis.
12553	Boiled ham	Indianapolis Abattoir Co.	Indianapolis.
12554	Pressed meat	Kingan & Co.	Indianapolis.
12698	Boiled ham	Ruth & Co.	Logansport.
12703	Ham	Beisendorf & Bro.	Chicago, Ill.
12704	Boiled ham	Beisendorf & Bro.	Chicago, Ill.
12710	Boiled ham	Beisendorf & Bro.	Chicago, Ill.
9968	Wienerwurst	C. Oscar Tribbey	Plymouth.
10326	Wienerwurst	Horace G. Hakes	Vincennes.
10327	Wienerwurst	Chas. Adault	Vincennes.
10615	Wienerwurst	Emerick & Madden	Churubusco.
12548	Wienerwurst	Worthington Bros.	Noblesville.
12696	Wienerwurst	R. Bowman	Ft. Wayne.
12702	Wienerwurst	J. O. Hetzner	Feru.

SMOKED MEATS—ILLEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
11159	Wienerwurst	Evans J. Jackman, Warsaw	Borax present.

MISCELLANEOUS MEATS.

All of the five miscellaneous meat products analyzed were pure. The sophistication and adulteration of this class of products, largely practiced a few years ago, has evidently been entirely abandoned.

MISCELLANEOUS MEATS—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
10068	Corned Beef	W. J. Shaffering, Michigan City	Pure.
10306	Head cheese	Chas. Taylor, Rochester	Pure.
12551	Dried beef	Indianapolis Abattoir, Indianapolis	Pure.
12699	Minced meat	Ruth & Co., Logansport	Pure.
12700	Luncheon meats	Swift & Co., Chicago	Pure.

SPICES.

In no class of food products or food ingredients has a greater improvement in character been noted than in the case of spices. While only two years ago 50 per cent of the spices on the market were adulterated, at the present time impure goods are almost never found. Of the 43 samples of allspice analyzed, 39 were legal, and the four illegal samples represented old goods that were not thrown out as they should have been when the Pure Food Law went into effect. But 2 of the 81 samples of black pepper analyzed were adulterated, and but one of the 58 samples of cinnamon sent in contained any foreign ingredient. No adulteration was found in the 15 clove samples, 16 gingers and the 12 mustards. Nine miscellaneous spices were also analyzed and in every case proved to be free from adulteration.

ALLSPICE—LEGAL.

Lab. No.	Manufacturer or Dealer.	Lab. No.	Manufacturer or Dealer.
8294	E. Bierhaus & Sons, Vincennes.	11203	Sent in from Michigan City.
8303	Bierhaus Bros., Vincennes.	11283	Robert B. Wark, Valparaiso.
8742	F. W. Klein, Logansport.	11285	Herrick & Herrick, Valparaiso.
8843	Jas. H. Clark, Columbus.	11286	Herrick & Herrick, Valparaiso.
8852	Will Wets, Columbus.	11289	W. G. Windle, Valparaiso.
8865	W. L. Patrick, Columbus.	11296	Lowenstein's Department Store, Valparaiso
8892	H. N. Dunlap, Franklin.	11391	E. C. Hall & Bro., Laporte.
9043	W. E. Jeffery, Washington.	11397	Swinell & Wright, Laporte.
9128	Guy Neal, Salem.	11403	A. Peterson, Laporte.
9136	Kelley & Allman, Peru.	11414	John S. Minich, Laporte.
9147	S. W. Smith, Peru.	11420	Roloff & Garwood, Laporte.
9661	M. Wernger & Son, Connersville.	11467	L. A. Jackson, Indianapolis.
9929	Dr. R. L. Hardwick, Mt. Vernon.	11487	A. E. Wysoog, Goshen.
10070	Fincke's Grocery, Michigan City.	11492	Ed E. Tiedemann, Goshen.
10075	O. A. Wellnitz, Michigan City.	11496	Ed Jacobs, Goshen.
10321	R. S. Lowery, Rochester.	11501	M. Shookman & Son, Goshen.
10676	Chas. W. Davis, Monticello.	11506	Sallinger Bros., Goshen.
10683	Monticello Cash Grocery, Monticello.	11515	A. Holtzinger, Goshen.
10859	Frank Odgen, Jeffersonville.	11528	J. P. Openheim, Goshen.

ALLSPICE—ILLEGAL.

Lab. No.	Manufacturer or Dealer.	Address.	Adulteration.
8128	O. L. Means	Shelbyville	Cocoonut shells.
9035	R. A. Dunn	Stinesville	Ground olive stones.
9087	Sent in from Washington		Cocoonut shells.
10303	L. E. Downie	Rochester	Cocoonut shells.

BLACK PEPPER—LEGAL.

Lab. No.	Manufacturer or Retailer.	Lab. No.	Manufacturer or Retailer.
8056	Thompson-Taylor Co., Chicago, Ill.	10629	Kiehler, Churubusco.
8298	Thompson-Taylor Co., Chicago, Ill.	10631	Isay, Churubusco.
8302	S. & S. Coffee Co., St. Louis, Mo.	10677	E. R. Webster & Co., Cincinnati, Ohio.
8307	Thompson-Taylor Co., Chicago, Ill.	10685	Monticello Cash Grocery Co., Monticello.
8386	Sims & Ohl, Mulberry.	10752	Wills, Kirkpatrick, Kentland.
8488	Schneider & Co., Logansport.	10755	W. S. Harbison, Kentland.
8666	Thompson & Taylor, Chicago.	10772	Thompson & Taylor, Chicago.
8741	F. W. Klein, Logansport.	10832	Hulman & Co., Terre Haute.
8839	Frohman Bros., Columbus.	10837	R. H. Bolin & Son, Brazil.
8841	Newson & Son, Columbus.	10849	Jerome Bogle, Brazil.
8853	Will Wets, Columbus.	10852	Jerome Bogle, Brazil.
8863	Heekin, Cincinnati, Ohio.	10857	Geo. W. Ostwalt, Brazil.
9012	All Williams, Bloomfield.	10903	Sheller's Cash Grocery, North Manchester.
9036	R. A. Dunn, Stinesville.	10912	John Shill, Winamac.
9040	H. F. Vollman Grocery Co., Washington.	10918	Fawley & Holderman, Winamac.
9085	I. J. Rich, Washington.	10941	J. L. Darnell, Danville.
9125	Guy Neal, Salem.	10956	Smith Bros., Gosport.
9130	W. J. Hanger, Salem.	10958	J. S. Brasier, Gosport.
9135	Kelly & Allman, Peru.	10960	T. C. Wampler, Gosport.
9138	McCallery & Co., Peru.	10998	J. F. Graao, Angola.
9148	S. W. Smith, Peru.	11000	Chas. E. Wells, Angola.
9226	L. M. Smith, Marengo.	11014	Woolson Spice Co., Toledo, Ohio.
9239	Eddy & Eddy, St. Louis, Mo.	11029	Kiah Steppy, Bicknell.
9303	Oliver Specker, Jasonville.	11052	Carl F. Needy, Freedom.
9347	Thos. W. Irwin, Cannelton.	11054	Jarius E. Dyar, Freedom.
9793	Chas. Wagener, South Bend.	11063	W. O. Reck, Newberry.
9795	G. C. Mussel & Son, South Bend.	11064	Wm. Benjamin, Newberry.
9798	Brodbeck Bros., South Bend.	11157	Alfred E. Gusherts, Warsaw.
9802	Sallinger Bros., South Bend.	11161	Dwinell & Wright, Chicago.
9933	E. C. Harley Co., Dayton, Ohio.	11204	Sent in from Michigan City.
9984	Ullmann's, Cincinnati, Ohio.	11230	Woolson Spice Co.
9991	Ullmann's, Cincinnati, Ohio.	11408	B. W. Grandstaff, Laporte.
10063	J. P. Dieter Co., Chicago.	11466	L. A. Jackson, Indianapolis.
10069	Fincke's Grocery, Michigan City.	11497	Ed Jacobs, Goshen.
10302	L. E. Downie, Rochester.	11502	M. Spookman & Son, Goshen.
10309	F. Marsh, Rochester.	11507	Sallinger Bros., Goshen.
10318	C. A. Kilmer, Rochester.	11510	W. W. Poyser, Goshen.
10320	R. S. Lowery's, Rochester.	11699	Blue Drug Store, Peru.
10445	Heekin Spice Co., Cincinnati, Ohio.	11838	Colonial Mfg. Co., Detroit, Mich.
10628	Schroeder, Churubusco.		

PEPPERS—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Remarks.
8849 11040	Geo. I. Winans..... Otto Thornberry.....	Columbus..... Mooreville.....	Adulterated with ground olive stones. Adulterated with ground olive stones.

CINNAMON—LEGAL.

Lab. No.	Manufacturer or Dealer.	Lab. No.	Manufacturer or Dealer.
8028	Deamond Grocery Co., Bedford.	10637	VanJeventer & Tapp, Spencer.
8054	H. Karn & Co., Evansville.	10753	Willis Kirkpatrick, Kentland.
8129	O. L. Meads, Shelbyville.	10831	Simon Branderburg, Clay City.
8299	E. Bierhouse & Sons, Vincennes.	10904	Skeller's Cash Grocery, North Manchester.
8375	Bierhouse Bros., Vincennes.	10917	Fawley & Holdermann, Winamac.
8331	E. W. Harris, Crawfordsville.	10999	J. F. Graso, Angola.
8667	Jas. Hargan Co., Madison.	11001	Chas. E. Wells, Angola.
8764	W. W. Kaufman, Terre Haute.	11013	Hebel Bros., Auburn.
8848	Geo. I. Winans, Columbus.	11015	Frank Huff, Auburn.
8856	Will Wetz, Columbus.	11158	Alfred E. Gusherts, Warsaw.
8862	W. L. Patrick, Columbus.	11232	S. C. Emrick, Rockfield.
8894	H. N. Dunlap, Franklin.	11282	Robert B. Wark, Valparaiso.
9038	R. A. Dunn, Stinesville.	11288	W. G. Windle, Valparaiso.
9044	W. E. Jeffrey, Washington.	11392	E. C. Hall & Bro., Laporte.
9082	I. J. Rich, Washington.	11396	F. B. Heust, Laporte.
9126	Guy Neal, Salem.	11402	A. Patterson, Laporte.
9129	W. J. Hanger, Salem.	11409	B. W. Grandstaff, Laporte.
9139	McCaffery & Co., Peru.	11415	John S. Minich, Laporte.
9292	Robertson Bros., Linton.	11419	Rolo & Garwood, Laporte.
9293	Enoch Murphy, Linton.	11461	Sent in from Indianapolis.
9295	Mack Brown, Linton.	11486	A. E. Wysong, Goshen.
9350	Thos. W. Irwin, Cannelton.	11491	Ed E. Tiedemann, Goshen.
9800	Brodbeck Bros., South Bend.	11493	Ed Jacobs, Goshen.
9985	Traders Palace Grocery, Plymouth.	11500	M. Shookman & Son, Goshen.
10310	F. Marsh, Rochester.	11505	Salinger Bros., Goshen.
10319	C. A. Kilmer, Rochester.	11509	W. W. Poyser, Goshen.
10627	Schroeder, Churubusco.	11514	A. Holtzinger, Goshen.
10630	Kishler, Churubusco.	11527	J. G. Openheim, Goshen.
10632	L. Isay, Churubusco.		

CINNAMON—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Remarks.
8846	Jas. H. Clark.....	Columbus.....	Adulterated with ground olive stones.

CLOVES—LEGAL.

Lab. No.	Manufacturer or Retailer.	Lab. No.	Manufacturer or Retailer.
8055	Thompson-Taylor Co., Chicago, Ill.	9086	*I. J. Rich, Washington.
8296	Thompson-Taylor Co., Chicago, Ill.	9131	W. J. Hanger, Salem.
8306	S. & S. Coffee Co., St. Louis, Mo.	9229	†L. M. Davis, Marengo.
8842	Newson & Son, Columbus.	10843	†Kruzan Bros., Brazil.
8844	Jas. H. Clark, Columbus.	10862	†Frank Ogden, Jeffersonville.
8851	Will Wetz, Columbus.	11045	†Cox & Moore, Midland.
8864	Heenin, Columbus.	11460	†L. A. Jackson, Indianapolis.
8891	H. N. Dunlap, Franklin.		

GINGER—LEGAL.

Lab. No.	Manufacturer or Dealer.	Lab. No.	Manufacturer or Dealer.
•8053	H. Karn & Co., Evansville.	9083	I. J. Rich, Washington.
8295	E. Bierhaus & Sons, Vincennes.	9127	Guy Neal, Salem.
8304	Bierhaus Bros., Vincennes.	9227	L. M. Davis, Maringo.
8847	Jas. H. Clark, Columbus.	9349	Thos. W. Irwin, Cannelton.
8854	Will Wets, Columbus.	10881	Frank Ogden, Jeffersonville.
8891	W. L. Patrick, Columbus.	11046	Cox & Moore, Midland.
9037	R. A. Dunn, Stinesville.	11202	Sent in from Michigan City.
9042	Mrs. W. E. Jeffery, Washington.	11463	Sent in from Indianapolis.

MUSTARD—LEGAL.

8297	E. Bierhaus & Son, Vincennes.	9045	W. E. Jeffery, Washington.
8355	Will Wets, Columbus.	9084	I. J. Rich, Washington.
8866	W. L. Patrick, Columbus.	9213	Sent in from South Bend.
8893	H. N. Dunlap, Franklin.	9348	Thos. W. Irwin, Cannelton.
9039	R. A. Dunn, Stinesville.	10860	Frank Ogden, Jeffersonville.
9041	Louis Keller, Washington.	11465	Sent in from Indianapolis.

MISCELLANEOUS SPICES—LEGAL.

Lab. No.	Kind.	Manufacturer or Retailer.	Remarks.
8845	Red pepper.....	Jas. H. Clark, Columbus.....	Pure.
9061	Cayenne pepper.....	I. J. Rich, Washington.....	Pure.
11324	Cayenne pepper.....	Smith Bros., Zionsville.....	Pure.
11464	Red pepper.....	L. A. Jackson, Indianapolis.....	Pure.
11468	White pepper.....	L. A. Jackson, Indianapolis.....	Pure.
10850	Ground nutmeg.....	Jerome Bogle, Brazil.....	Pure.
11839	Ground nutmeg.....	Colonial Manufacturing Co., Detroit, Mich.....	Pure.
10055	Mace.....	Sent in from Indianapolis.....	
10446	Celery salt.....	Woolson Spice Co, Toledo, Ohio.....	Pure.

VINEGARS.

The report for 1907 says that "The adulteration of cider vinegar still continues." This is equally true for 1908, for of the 122 samples of cider vinegar analyzed during the year, 66 were either not cider vinegar or were below the legal requirements in acidity and solid content. Thirty-four of the 66 illegal samples were sent in by manufacturers or by grocers who desired to know before offering the goods for sale whether or not they were legal products. The inferior character of the vinegar in the hands of the farmer is constantly noted. Many cider vinegars are improperly acetified and come to market with a high alcohol content. If these vinegars were properly handled so that the alcohol would undergo acetous fermentation, a satisfactory product could be made. The attention of retailers is directed to the misleading and deceptive labels which frequently appear on vinegars purchased by them in good faith as cider vinegar or blended cider vinegar. Many of these goods contain almost no cider vinegar and are simply colored distilled goods, flavored to imitate a cider vinegar product.

VINEGARS—LEGAL.

Lab. No.	Retailer or Manufacturer.	Address.	Acidity.	Solids.	Ash.	Alkalinity.	Polarization.	Lead Acetate Precipitate.	Color.
10127	Smith & Riggs	Princeton	4.11	2.122	0.228	14	-1.4	Heavy	Normal
10129	Spague, Warner & Co.	Chicago, Ill.	4.07	1.794	0.325	24	±0.0	Heavy	Normal
10291	C. E. Bredenkamp	Evansville	4.17	2.460	0.375	22	-4.0	Heavy	Normal
10338	Jacob Rupp	Evansville	4.65	2.615	0.280	32	-2.4	Heavy	Normal
10394	Henry Kunz	Evansville	4.81	2.307	0.186	18	-2.2	Heavy	Normal
10465	Bloomington Pickle Co.	Bloomington, Ill.	4.00	1.785	0.196	22	.....	Medium	Normal
10471	Montreal Grocery Co.	Montreal	4.08	2.230	0.310	12	-1.6	Heavy	Normal
10519	Price & Lucas	Louisville, Ky.	4.68	2.900	0.365	34	-1.8	Medium	Normal
10524	Bloomington Pickle Co.	Bloomington, Ill.	4.23	1.948	0.300	22	-1.2	Heavy	Normal
10575	New E. Robinson	Arcadia	4.42	2.700	0.225	16	±0.0	Heavy	Normal
10581	Jerome Bogle	Brazil	4.12	2.400	0.370	24	-2	Heavy	Normal
10583	Matt.	New York	4.05	2.520	0.235	22	-1.8	Heavy	Normal
10636	H. Carson	Danville	4.61	1.710	0.220	24	-1.0	Medium	Normal
10638	Smith Bros.	Goport	4.14	2.730	0.330	28	-1.0	Medium	Normal
10963	Price & Lucas	Louisville, Ky.	4.23	2.500	0.340	34	±0.0	Heavy	Normal
11222	Harrel & Smith	Worthington	5.26	1.600	0.378	30	±0.0	Medium	Normal
11256	H. L. Hicks	Evansville	5.41	2.145	0.275	26	-2.2	Medium	Normal
11260	W. G. Windle	Valparaiso	4.57	2.691	0.446	16	±0.0	Heavy	Normal
11266	Loventine Department Store	Valparaiso	4.05	2.801	0.410	16	-4	Medium	Normal
11312	Wilton R. Neerimer	Odon	4.00	3.923	0.254	20	-4	Slight	Normal
11340	George E. Miller	Thornstown	4.59	2.200	0.267	14	-6	Medium	Normal
11341	Roy C. Finkle	Mulberry	4.16	2.660	0.311	18	±0.0	Medium	Normal
11382	Boeger Bros.	Logansport	4.11	2.156	0.191	10	-6	Slight	Normal
11395	E. C. Hall & Bro.	Laporte	4.14	2.046	0.223	24	±0.0	Slight	Normal
11418	F. B. Heust	Laporte	4.71	2.220	0.315	28	-1.6	Medium	Normal
11470	Robolt & Garwood	Laporte	4.31	2.640	0.267	26	-8	Heavy	Normal
11511	L. A. Jackson	Indianapolis	4.66	1.865	0.300	36	-1.0	Heavy	Normal
11516	W. W. Royer	Goshen	4.66	3.063	0.377	36	-1.0	Heavy	Normal
11530	A. Holtzinger	Goshen	4.68	2.662	0.405	32	-1.4	Heavy	Normal
11539	J. G. Openheim	Goshen	4.16	2.362	0.381	30	.....	Medium	Normal
11592	W. D. Huffman	Indianapolis	4.09	1.457	0.297	30	-4	Heavy	Normal
11593	W. D. Huffman	Indianapolis	4.20	2.212	0.227	24	-1.2	Heavy	Normal
11612	Jos. A. Goddard Co.	Muncie	6.10	3.710	0.345	46	-2	Heavy	Normal
11613	Jos. A. Goddard Co.	Muncie	4.07	2.500	0.246	30	-1.2	Heavy	Normal
11661	C. E. Burdley & Co.	Muncie	4.26	2.615	0.325	30	-2.0	Heavy	Normal
11667	W. O. Brown	Ft. Wayne	4.09	2.120	0.220	30	±0.0	Medium	Normal
11678	Oakland Vinegar & Pickle Co.	Amp.	4.20	2.100	0.305	34	-1	Medium	Normal
11690	H. H. Mills	Danville	4.19	2.163	0.308	40	-1.6	Medium	Normal
11714	Newt. Robinson	Arcadia	6.64	2.171	0.363	38	-2	Medium	Normal
11715	Newt. Robinson	Arcadia	5.18	1.328	0.306	32	-8	Slight	Normal
11728	Dr. H. E. Phares	Shelbyville	4.04	1.875	0.330	28	-8	Heavy	Normal

11911	Cooper & Housford...	Worthington...	4.70	1.907	0.320	34	± 0	Medium.	Normal.
11922	Kode, Wells & Bauer...	Indianapolis...	4.15	1.922	0.320	30	-2.0	Heavy	Normal.
12553	Frank Voreh...	Lafayette...	5.42	2.550	0.325	30	-1.6	Slight.	Normal.
12691	Cullisphant Bro. Co.	Pittsburg, Pa.	4.01	2.175	0.290	34	-1.6	Slight.	Normal.
12717	Price & Lucas...	Louisville...	4.31	2.310	0.275	30	-1.8	Heavy	Normal.
12873	Gordon Vinegar Co.	Pontiac, Mich.	4.10	2.558	0.215	18	-5.4	Medium	Normal.
12874	Produce Bros.	South Bend...	4.23	2.330	0.235	20	-2.4	Heavy	Normal.
12886	M. L. Swayze...	Marion...	4.26	2.628	0.425	36	± 0.0	Heavy	Normal.
12889	C. M. Risk	Knightsdown...	4.79						
12901	C. M. Risk	Knightsdown...	4.35						
12902	C. M. Risk	Knightsdown...	5.64						
12903	C. M. Risk	Knightsdown...	5.64						
12905	C. M. Risk	Knightsdown...	5.50						
12908	C. M. Risk	Knightsdown...	4.95						

VINEGAR—ILLEGAL.

Lab. No.	Retailer or Manufacturer.	Address.	Acidity.	Solids.	Ash.	Alkalinity.	Polarization.	Lead Acetate Precipitate.	Color.	Remarks.
9946	Farmer's sample	Mooreville	1.22	1.405	0.200	12	-8	Heavy	Normal	Watered
9967	Farmer's sample	Mooreville	2.27	1.420	0.320	30	-1.4	Heavy	Normal	Watered.
9968	Farmer's sample	Mooreville	2.63	1.110	0.235	18	0	Heavy	Normal	Watered.
10056	Old Homestead Blended Vinegar Co.	Marion	3.82	0.115	0.038	18	+2	None	Caramel	Not a blended vinegar.
10094	W. T. Custer	Franklin	2.60	0.975	0.200	16	+1	Heavy	Normal	Below standard.
10227	Sent in from Laporte	Franklin	2.23	0.215	0.200	24	0	Light	Normal	Below standard.
10393	Tisher Bros	Evansville	3.85	1.650	0.380	34	-1.6	Heavy	Normal	Below standard.
10469	Farmer's sample	Evansville	3.28	2.990	0.300	30	±0	Heavy	Normal	Below standard.
10478	Price & Lucas Blended	Louisville Ky	4.70	1.300	0.300	30	±0	Heavy	Normal	Not a blended vinegar.
10526	Goble Bros	Greenfield	2.53	0.262	0.055	26	-1.6	Heavy	Normal	Below standard.
10705	Farmer's sample	Noblesville	2.70	1.490	0.245	22	-1.6	Heavy	Normal	Below standard.
10706	Farmer's sample	Noblesville	5.94	5.905	0.245	34	-9.4	Heavy	Normal	Low in acidity.
10707	Farmer's sample	Noblesville	5.55	1.500	0.350	34	-1.0	Heavy	Normal	Below standard.
10732	Price & Lucas	Louisville, Ky	3.55	1.450	0.315	28	-1.8	Heavy	Normal	Low in solids.
10733	Price & Lucas	Louisville, Ky	3.68	0.315	0.037	6	±0	None	Normal	Below standard.
10838	Collier & Thompson	Louisville, Ky	3.92	2.310	0.340	34	-1.4	None	Caramel	Not a blended vinegar.
10867	Sent in from Brazil	Brazil	2.55	3.030	0.373	38	-4.2	Heavy	Normal	Below standard.
10934	Price & Lucas	Danville	3.70	0.345	0.020	6	±0	None	Caramel	Below standard.
10939	Price & Lucas	Louisville, Ky	3.00	0.190	0.060	6	±0	None	Caramel	Not a blended vinegar.
10952	John Leith	Corport, Ky	4.56	0.468	0.060	5	±0	None	Caramel	Not a blended vinegar.
10965	Price & Lucas	Louisville, Ky	3.92	0.400	0.050	8	±0	None	Caramel	Not a blended vinegar.
11038	Bartholomew Bros	Vinennes	5.07	0.221	0.038	6	±0	None	Caramel	Not a blended vinegar.
11218	Robt. Shuburn	Worthington	2.80	0.215	0.034	8	±0	None	Caramel	Not a blended vinegar.
11223	Cooper & Hunsford	Worthington	3.75	1.900	0.350	38	-8	Heavy	Normal	Not a blended vinegar.
11260	Sent in from Clark's Hill	Clark's Hill	3.01	1.450	0.13	8	±0	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	2.56	1.635	0.233	16	±0	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	4.44	1.049	0.250	24	±0	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	2.47	1.812	0.200	18	-2.8	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	3.00	1.262	0.218	24	-4	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	3.90	1.341	0.273	26	±0	Heavy	Normal	Below standard.
	Sent in from Clark's Hill	Clark's Hill	5.63	0.364	0.049	6	±0	None	Caramel	Not a blended vinegar.
11271	J. F. Stucker	Paoli	3.09	1.700	0.322	34	-1.6	Medium	Normal	Below standard.
11280	Robt. B. Wark	Valparaiso	4.05	2.684	0.288	8	±0	Heavy	Normal	Low in alkalinity.
11331	Franklin McVeagh	Chicago, Ill.	3.50	2.385	0.265	18	±0	None	Normal	Not a blended vinegar.
11401	A. Patterson	Laporte	4.77	0.250	0.045	2	±0	None	Caramel	Not a blended vinegar.
11464	A. E. Wyong	Gothen	4.23	0.258	0.071	4	±0	None	Caramel	Not a blended vinegar.
11499	M. Shoorman & Son	Gothen	4.22	0.281	0.060	12	±0	None	Caramel	Not a blended vinegar.
11596	Sent in from Clark's Hill	Clark's Hill	3.03	1.230	0.259	20	-4	Medium	Normal	Below standard.
11599	Sent in from Clark's Hill	Clark's Hill	2.61	1.100	0.230	26	-1.2	Medium	Normal	Below standard.
11600	Sent in from Clark's Hill	Clark's Hill	2.64	1.870	0.237	24	-1.2	Medium	Normal	Below standard.
11698	John P. Wolf	Wabash	2.18	1.590	0.306	36	-2	Medium	Normal	Below standard.

11609	John P. Wolf	Wabash	3.35	2.695	0.345	34	-1.6	Medium	Normal	Below standard.
11675	Sent in from Lafayette		3.15	0.924	0.223	20	+0.	Medium	Normal	Below standard.
11691	Sent in from Davville		3.67	0.304	0.065	8	+ .4	None	Caramel	Not a cider vinegar.
11723	W. T. Cutsinger	Franklin	1.73	1.380	0.262	26	- .8	Heavy	Normal	Below standard.
11723	W. T. Cutsinger	Franklin	1.25	2.776	0.474	46	- .8	Heavy	Normal	Below standard.
11724	W. T. Cutsinger	Franklin	1.95	1.707	0.317	30	- .2	Heavy	Normal	Below standard.
11725	W. T. Cutsinger	Franklin	2.34	1.707	0.303	36	-1.0	Heavy	Normal	Below standard.
11726	W. T. Cutsinger	Franklin	2.36	1.287	0.321	32	- .4	Heavy	Normal	Below standard.
11727	W. T. Cutsinger	Franklin	3.15	1.373	0.348	34	- .6	Heavy	Normal	Below standard.
11825	Sent in from Noblesville		2.99	1.100	0.305	30	+0.	Light	Normal	Below standard.
12043	Sent in from Indianapolis		0.66	2.065	0.340	32	-1.6	Heavy	Normal	Below standard.
12066	Sent in from Elmhurst		1.92	0.812	0.287	14	+0.	Medium	Normal	Below standard.
12578	Sent in from Bloomington		1.64	1.670	0.235	20	-2.0	Light	Normal	Not a vinegar.
12580	Sent in from Martinsville		1.70	2.130	0.435	32	-1.8	Light	Normal	Not a vinegar.
12751	Needham	Plainfield	2.89	2.012	0.205	26	-1.6	Medium	Normal	Below standard.
12757	S. A. Haselett	Greencastle	2.39	2.333	0.245	32	- .8	Heavy	Normal	Below standard.
12764	Isaac Whitley	Cambridge City	2.75	2.817	0.350	34	- .8	Medium	Normal	Below standard.
12813	Farmer	Indianapolis	0.86	0.230	0.045	6	+0.	None	Caramel	Distilled vinegar.
12835	Lichtenhaber Grocery	Indianapolis	4.40							
12898	Sent in from Knightstown		2.91							Below standard.
12900	Sent in from Knightstown		3.44							Below standard.
12904	Sent in from Knightstown		3.91							Below standard.
12906	Sent in from Knightstown		2.54							Below standard.
12907	Sent in from Knightstown		2.36							Below standard.
12909	Sent in from Knightstown		3.62							Below standard.

DISTILLED VINEGAR.

Twenty-four distilled vinegars were analyzed during the year, and in all but two cases the product was up to the legal requirements as to acidity. Most of these goods are colored with caramel, and to that extent they are fraudulent, since there can be no question but that the use of caramel in distilled vinegar is for the purpose of making the goods look like cider vinegar. While the barrels are properly labeled and marked "colored distilled," yet the vinegar which reaches the consumer is not so marked, and is supposed by him to be what its color indicates, a cider vinegar.

WHISKY.

Nine of the 17 samples of whisky analyzed were legal and were true whiskies. The eight illegal whiskies were largely neutral spirits colored to imitate whisky. Several of them were very low in proof. One sample supposed to be whisky was water colored with caramel; this innocuous product was part of the stock of a saloon which had recently changed hands.

WINE.

Seventeen samples of wine have been analyzed during the year and the results appear in the table following.

BEER.

Eight samples of beer have been analyzed during the year, the results of which are given in the following table. The present brewery product commonly known as beer is free from preservatives and artificial sweeteners.

DISTILLED VINEGARS—LEGAL.

Lab. No.	Kin-d.	Manufacturer or Retailer.	Address.	Acidity.	Solids.	Ash.	Alka-linity.	Polar-ization.	Lead Acetate Precipitate.	Color.
10496	Colored.	Frohman & Co.	Columbus.	4.00	0.240	0.040	3	±0.	None	Caramel.
10525	White.	Bloomington Pickle Co.	Bloomington.	4.20	0.015	0.004		±0.	None	None.
10635	Colored.	Sent in from Clay City.		4.32				±0.	None	Caramel.
10931	Cider flavored.	C. E. Edwards	Danville.	4.31	0.151	0.028	2	±0.	None	Caramel.
10942	Blended.	J. L. Darnell.	Danville.	4.15	0.150	0.025	4	+ .8	None	None.
12061	White.	Fisher & Son.	Noblesville.	4.03	0.440	0.060	4	±0.	None	None.
10964	Colored.	C. A. Schrader	Indianapolis.	4.49	0.490	0.055	6	±0.	None	Caramel.
11215	Colored.	Roeder & Co.	Sandborn.	4.88	0.308	0.059	2	±0.	None	Caramel.
11216	White.	Gregory, Wood & Hunsale.	Sandborn.	4.20	0.197	0.058	2	±0.	None	None.
11217	Colored.	Gregory, Wood & Hunsale.	Sandborn.	4.00	0.215	0.015	2	±0.	None	Caramel.
11220	Colored.	Baker Bros.	Worthington.	4.31	0.329	0.055	2	+ 1.2	None	Caramel.
11221	Colored.	Cullop & Bates.	Worthington.	4.00	0.500	0.075	6	+ 1.	None	Caramel.
11224	Colored.	Cooper & Housford	Indianapolis.	4.61	1.349	0.092	2	+ 1.8	None	Caramel.
11313	Colored.	Kothe, Wells & Bauer.	Bicknell.	4.50	0.374	0.027	2	+ 1.2	None	Caramel.
11314	Colored.	Keuser & Horn.		4.34	0.334	0.042	2	±0.	None	Caramel.
11567	Colored.	Sent in from South Bend.		4.02	0.300	0.033	4	±0.	None	Caramel.
11570	White.	Sent in from Thorntown.		4.45	0.165	0.050	1	±0.	None	None.
11776	White.	Sent in from Thorntown.		4.55	0.152	0.030	1	±0.	None	None.
12632	Colored.	Price & Lucas.	Louisville, Ky.	4.62	0.500	0.157	8	+ 4.	None	Caramel.
	Colored.	Sent in from Indianapolis.		6.25						
	Colored.	Sent in from Indianapolis.		5.72						
	Colored.	Sent in from Indianapolis.		7.84						

DISTILLED VINEGARS—ILLEGAL.

Lab. No.	Manufacturer or Retailer.	Address.	Acidity.	Solids.	Ash.	Alka-linity.	Polar-ization.	Lead Acetate Precipitate.	Color.
11315	Price & Lucas.	Louisville.	3.81	0.372	0.050		±0.	None	Caramel.
11344	Luther Cross.	Thorntown.	3.31	0.185	0.037		±1.		

Note.—Both samples below standard.

MALT VINEGARS—LEGAL.

11245	Ed. Marten.	Thorntown.	4.13	2.106	0.257	24	— 8	Slight	Normal.
10594	Molasses vinegar, Sprague Warner & Co.	Chicago.	4.52	3.065	0.430	48	+ 1.8	Heavy	Normal.

WHISKY—LEGAL.

Lab. No.	Manufacturer or Dealer.	Address.	Specific Gravity at 20° C.	Alcohol Per Cent. Volume at 20° C.	Ext. Grains per 100 C.C.	Color Carried & down by Fuller's Earth.	Per Cent. Color Extracted by Ether.
9744	T. B. Shaffer & Co.	Sullivan	.9353	47.1	0.4032	Slight	
10185	Sent in from Knightstown.			46.8	0.1100		
10591*	Hasterlik Bros.	Chicago, Ill.	.9425	43.1	0.1890	Half	
10783	Sent in from Indianapolis.		.9371	46.1	0.1508	65 Per Cent.	20
10785	Indiana Liquor House.	Terre Haute	.9301	49.8	0.1624		
10796	Standard Liquor Co.	Terre Haute	.9392	44.9	0.1496		
10865	Sent in from Indianapolis.		.9273	51.1	0.2373	Slight	
12910	Sent in from Indianapolis.		.9373	46.0	0.1653	Slight	
12911	Sent in from Indianapolis.		.9366	46.3	0.1460	Slight	

*Labeled "Blended with Old Crow."

WHISKY—ILLEGAL.

10337	Sent in from Indianapolis.		.9362	46.3	0.1520	Almost all	
10466	Sent in from Princeton.		.9333	36.3	0.1190	Practically all	
10514	W. C. Duncan.	Clay City	.9452	41.5	0.1940	Complete.	
10793	C. J. Herber.	Terre Haute	.9411	43.9	0.2684	Complete.	
10825	M. E. Mull.	Worthington	.9572	33.7	0.2286	75 Per Cent.	
10826	M. E. Mull.	Worthington	.9573	33.6	0.2212	75 Per Cent.	
10827	M. E. Mull.	Worthington	.9570	33.8	0.2288	75 Per Cent.	
12079*	Sent in from Indianapolis.		.9689	0.0	0.0000		

*Caramel color water.

WINE.

Lab. No.	Manufacturer or Dealer.	Kind.	Alcohol Per Cent. by Weight 17.5° C.	Alcohol Per Cent. by Vol. 20° C.	Ext. Grams per 100 C. C.	Specific Gravity of Wine.	Ash Per Cent.	Volatile Acids.	Fixed Acids.	Total Acids.	Potassium Sulphite.	Potassium Bitartrate.	Free Tartaric Acid.	Total Tartaric Acid.	Preservatives.	Color.
8843	Sent in from Indianapolis.	Catawba	11.44		13.72											
8844	Sent in from Indianapolis.	Sherry	16.84		5.68											
8845	Sent in from Indianapolis.	Madeira	16.96		14.17											
8846	Sent in from Indianapolis.	Tokay	15.60		16.29											
8847	Sent in from Indianapolis.	Angelica	16.24		18.11											
8848	Sent in from Indianapolis.	Muscata.	15.50		14.44											
8849	Sent in from Indianapolis.	White Port.	13.14		16.93											
8850	Sent in from Indianapolis.	Irondequoit.	13.36		17.14											
10657	Sent in from Indianapolis.	Concord		8.61	2.26			0.0432							None.	Natural.
11553	Sent in from Muncie.		9.48		3.77										None.	Natural.
11614	Sent in from Elkhart.	Port.		15.40	24.38	1.0715	0.250	0.0744							None.	Natural.
11692	Sent in from Indianapolis.	Blackberry.		13.53	25.77		0.365	0.0504							None.	Natural.
11693	Sent in from Indianapolis.	Port.		15.83	12.98										None.	Natural.
12077	Sent in from Indianapolis.	Blackberry.		10.70	22.22										None.	Natural.
12690	Sent in from Berne.	California Port		11.19	11.19		0.305								None.	Natural.
12731	Sent in from Indianapolis.			19.20	11.44	1.0184	0.274	0.768	0.6240	0.7200	0.1096	0.248	0.1860		None.	Natural.
12808	Sent in from Hammond.			10.06	3.02	0.9975	0.347	0.2880	0.9300			0.501		1.280	None.	Natural.

BEER.

Lab. No.	Manufacturer or Dealer.	Address.	Alcohol by Weight.	Alcohol by Volume.	Ext. Grams 100° C. C.	Ash Per Cent.	Per Cent. Ext. Original Wort.	Degree of Fermentation.	Specific Gravity at 20° C.	Phosphoric Acid.	Volatile Acids as Acetic.	Direct Polarization.	Indirect Polarization.
9233	Huntington Brewing Co.	Huntington	2.7	3.3	3.90								
9301	Chas. Schaefer	Corydon.	2.8	3.5	5.10								
9738	W. M. Frazer	Sullivan.	3.4	4.3	6.81								
10521	S. W. Phillips	Brasil.	3.7	4.7	6.92								
11730	Sent in from South Bend.		3.7	4.6	3.94								
12684	Sent in from W. Vincennes.		2.7	3.0	3.15								
12685	Sent in from W. Vincennes.		2.7	3.4	3.29								
12686	Sent in from W. Vincennes.		3.8	4.7	4.05								
9233							8.75	62.4	1.0094	0.0281	0.0060	+24.4	+23.8
							11.67	65.	1.0074	0.0449	0.0045	+28.0	+29.0

TEMPERANCE BEER.

Recent legislation has operated to make the sale of beer illegal in many parts of the State, and in order to meet the demand for a palatable bitter beverage the brewing industry has produced a so-called "temperance" beer. Temperance beer looks like beer, smells like beer and tastes somewhat like beer, although the alcohol content is very low. This product is made by the brewers in different ways. In some instances the alcohol is removed from a normal beer by steaming or distilling off the alcohol, the resultant product containing all the extract, ash and sugars of the original beers, but the alcohol is not there. Sometimes the alcohol is removed by freezing the beer and taking off the unfrozen portion, which is high in alcohol. The most common method of preparation is to start with a very light wort, usually not over 8 per cent Balling, instead of 12, the average Balling for standard beer. In some instances the Balling is not over 6. This light wort is then fermented as lightly as possible—weak yeast being used and the period of fermentation being reduced. The resultant product is Pasteurized, and as it appears on the market usually contains less than 1 per cent of alcohol. A few temperance beers have been found which were nothing more than water flavored with hop extract, colored with caramel and sweetened with saccharin. Such products have no food value and possess none of the characteristics of beer. No preservatives have been found in the temperance beers analyzed during the year, and in no instance, save in the case of "Beerette," has saccharin been present.

SO-CALLED TEMPERANCE BEERS.

Lab. No.	Article.	Manufacturer.	Location.	Sent in by	Location.	Alcohol.	
						By Weight.	By Volume.
9853	Hop Cream	Chas. F. Ogren & Co.	Chicago, Ill.	Vandalia R. R. Co.	Indianapolis	2.49	3.13
9854	Malt Mead	Pabst Brewing Co.	Milwaukee.	Vandalia R. R. Co.	Indianapolis	1.36	1.71
9855	Malt Mead	A. Lieber Co.	Indianapolis	Jacob Coolman	Indianapolis	1.36	1.71
10398	Litha Malt		Indianapolis	Attorney General	Broad Ripple	1.48	1.85
11990	Beerette	Chas. F. Ogren & Co.	Chicago, Ill.	R. P. Scott	Indianapolis	0.35	0.44
12017	Hop Cream	Chas. F. Ogren & Co.	Chicago, Ill.	J. M. Ward	Etna Green	2.50	3.14
12074	Hop Cream	Chas. F. Ogren & Co.	Chicago, Ill.	Alex. Rub.	Kewanee	2.50	3.14
12081	Hop Cream	Indianapolis Brewing Co.	Indianapolis	Indianapolis Brewing Co.	Rochester	2.50	3.14
12082	Temperance Beer			Dr. Chas. Gillespie	Indianapolis	0.0	
12099	Beerette	Temperance Beverage Co.	Chicago, Ill.	J. L. Duncan	Coolersville	0.21	0.26
12182	Quaker Temperance Beer	Evansville Brewing Association.	Evansville, Ind.	R. E. Espin	Spencer	0.0	
12588	Jingo	Indianapolis Brewing Co.	Indianapolis	Attorney General	French Lick	0.42	
12589	Tonica	Indianapolis Brewing Co.	Indianapolis	W. C. Ewing	Indianapolis	0.63	
12659	Tonica	Indianapolis Brewing Co.	Indianapolis	Dr. Willis McGraw	Rochester	0.42	0.48
12663	Tonica	T. M. Norton Br wing Co.	Anderson, Ind.	A. R. Long	Thorntown	0.28	0.35
12664	Norton's Nip	Terre Haute Brewing Co.	Terre Haute	Dr. Willis McGraw	Thorntown	0.23	0.35
12665	Velveteen	Indianapolis Brewing Co.	Indianapolis	A. R. Long	Fairmount	0.11	0.18
12666	Tonica	C. L. Cantilivre Brewing Co.	Fort Wayne	Ed Kuntz	Fairmount	0.25	0.33
12683	Hop Cream	Chas. F. Ogren & Co.	Chicago, Ill.	J. M. Spangler	Fort Wayne	0.49	0.61
12712	Tonica	Pabst Brewing Co.	Indianapolis	J. M. Spangler	Winamac		3.09
12713	Hop Cream	Pabst Brewing Co.	Milwaukee	J. M. Spangler	Winamac	0.49	0.61
12714	Hop Cream	Pabst Brewing Co.	Chicago, Ill.	J. M. Spangler	Winamac	1.35	1.95
12715	Mead	Pabst Brewing Co.	Milwaukee	J. M. Spangler	Winamac	2.31	2.90
12718	Hop Cream	Hoelter Brewing Co.	Chicago, Ill.	J. M. Spangler	Winamac	1.55	1.95
12719	Velveteen	Terre Haute Brewing Co.	Columbus, Ohio	F. M. Hundley	Summitville	1.51	2.04
12720	Norton's Nip	T. M. Norton Brewing Co.	Anderson, Ind.	F. M. Hundley	Summitville	Trace	0.92
12721	Beer	Fred Miller Brewing Co.	Milwaukee	F. M. Hundley	Summitville	0.07	
12722	Tonica	Indianapolis Brewing Co.	Indianapolis	F. M. Hundley	Summitville	Trace	
12723	Tonica	Indianapolis Brewing Co.	Indianapolis	V. E. Kasy	Summitville	1.36	1.71
12725	Beer	A. Roenfeld Co.	Cincinnati, Ohio	V. E. Kasy	Peru	0.21	0.26
12726	Book Beer	Terre Haute Brewing Co.	Terre Haute	V. E. Kasy	Peru	0.21	0.26
12740	Velveteen	Von Blatz Co.	Milwaukee	Jacob Metzger	Peru	0.07	0.092
12746	All Hall	Chas. Ogren & Co.	Chicago, Ill.	Inspector D.	Indianapolis	0.42	0.52
12747	Hop Cream			Inspector D.	Culver, Ind.	1.26	1.60
				Inspector D.	Culver, Ind.	2.31	2.90

SO-CALLED TEMPERANCE BEERS—CONTINUED.

Lab. No.	Article	Manufacturer.	Location.	Sent in by	Location.	Alcohol.	
						By Weight	By Volume
12759	Tonics	Indianapolis Brewing Co.	Indianapolis	Oren Hack	Indianapolis	0.42	0.525
12810	Homo	Home Brewing Co.	Indianapolis	Edgar M. Blessing	Danville	0.70	0.90
12811	Homo	Home Brewing Co.	Indianapolis	Edgar M. Blessing	Danville	0.70	0.90
12849	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.80	2.25
12851	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.80	2.25
12852	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.80	2.25
12853	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.80	2.25
12854	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.81	2.02
12855	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.74	2.18
12856	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.74	2.18
12857	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	1.80	2.25
12858	Mead	Palat Brewing Co.	Milwaukee	S. M. Swisha	Winamac	2.35	3.57
12859	Hop Cream	Chas. O'Brien & Co.	Chicago, Ill.	C. M. Swisha	Winamac	2.31	2.90
12860	Malt Cream	Chas. O'Brien & Co.	Chicago, Ill.	C. M. Swisha	Winamac	4.57	5.74
12861	Malt Cream	McAvery Brewing Co.	Chicago, Ill.	C. M. Swisha	Winamac	0.84	1.05
12862	Quaker Temperance Beer	Temperance Brewing Co.	Chicago, Ill.	S. T. Whitman	Monticello	0.41	0.49
12867				Major Sanderson		0.127	0.16
12919	Bevo	Anheuser-Busch Co.	St. Louis, Mo.		Nat'l Military Home		

Lab. No.	Article	Extract.		Ash.	Phosphoric Acid.	Specific Gravity @20 C.	Volatile Acids.		Reducing Sugars.	Polarization.		Degrees Fermentation.	Original Extract Wort.	Preservatives.		
		By Weight Immer.	Direct Weight.				As N=10 C.C. NaOH.	As Acetic Acid.		Direct.	Invert.			Saccharin.	Benzoic.	Sulphuric.
9853	Hop Cream	3.92														
9854	Malt Mead	4.61														
9855	Malt Mead	5.56														
10308	Libia Malt															
12007	Beerette	0.762														
12017	Hop Cream	3.118												Present		
12074	Hop Cream	3.16														
12083	Hop Cream	3.04														
12084	Temperance Beer	4.023												None.		
12099	Beerette	0.010												Present		

THE SOLUBILITY OF ZINC ELECTROPLATE IN LEMONADE AND CITRIC ACID SOLUTIONS.

H. E. BARNARD AND H. E. BISHOP.

That the lemonade manufactured in and sold from galvanized iron tubs and buckets is not wholesome, and, in fact, frequently causes nausea, has long been known. The very general use of galvanized iron receptacles by lemonade vendors at county fairs and public gatherings has prompted a study of the solubility of zinc in solutions of citric acid and lemon juice in the strengths usually employed. This report gives the results of the several experiments undertaken.

The ordinary practice of the vendor in making his lemonade is to use a little citric acid, some sugar, a few lemon peels, plenty of water and a piece of ice, replenishing the water as the drink is dispensed.

This method of manufacture gave a varying product and one not adapted to analytical study, therefore a definite scheme was followed in the work which gave solutions of approximately the same strength in acidity as the commercial article, but which were more readily analyzed. Two kinds of solutions were used, one made from lemonade, sugar and ice-water and the other made from citric acid, sugar and ice-water.

The vessels used to hold the solutions were, in Experiment 1, a small foot tub, and in Experiments 2 to 7, twelve-quart buckets. These containers were of ordinary galvanized ironware and had not been used prior to the beginning of the experiments. Tub was not used because of the large quantity of liquid necessary to fill them.

In Experiment 1 the juice and skins from 1,423 grams of lemons were mixed with 775 grams of sugar and 12½ liters of ice-water. The container and solution was put into a large ice chest and kept cold for the entire time the experiment was being carried on. Samples were taken 2, 4, 6, 8, 10, 24, 48, and 72 hours after the solution was put into the tub. These samples were tested for acidity and for zinc content by the volumetric ferrocyanide method of Galletti as given in Sutton's Volumetric Analysis, page 356. It was found that the acidity of the lemon solutions gradually increased up to six hours, after which it decreased very little, an indication that the acid in the lemon pulp was not dissolved at once by the water.

At the end of 72 hours the surface of the tub was corroded so badly that this container was not used again.

In the other experiments, Nos. 2 to 6, the buckets were used. In-

stead of leaving the same solution in contact for 72 hours, a new solution was made each morning for three mornings and samples taken 2, 4, 6, 8, 10, and 24 hours after making the solution.

The citric acid solutions were much more active than the lemon solutions, although the acidity according to taste was about the same. The results for the solutions show a marked increase in zinc content on the second and third days, which may be explained by the fact that the surface of the metal was not clean when the first experiments were started.

The tables following are complete and are self-explanatory.

Table No. 8 shows the quantity of zinc as zinc citrate that was found in 100 cubic centimeters of the liquid at the end of certain periods.

As the dose of zinc citrate runs from .2 to .8 grams, it is evident that a person drinking an ordinary "schooner" of this lemonade would be taking into his system a very large overdose of this salt.

These results were presented to the State Board of Health, which immediately issued the following rule:

RULE 21.—Whereas, It is known that citric and tartaric acids will dissolve zinc; and as these acids are used in the making of acid drinks; and as the citrates and tartrates of zinc are poisonous; therefore,

It shall be unlawful henceforth to use zinc-coated metal containers in the manufacture and for the storage of acid drinks.

EXPERIMENT No. 1.

Weight lemons taken, 1,423 grams. Sugar, 775 grams. Made up to 12.5 litres.

Hours in Container.	Depth of Solution, Cm.	Acidity, C.C. N_2NaOH Per 100 C.C.	M. M. Zinc per 100 C.C.	Total Area Exposed, Sq. Cm.	Total Volume in C.C.	Total Zinc Dissolved, Milligrams.	Zinc Dissolved, Milligrams.	
							Per C. C.	Per Sq. Cm.
2.....	13.0	34.4	12.9	2,305.1	12,500	1,612.5	.129	.00905
4.....	12.5	36.8	13.7	2,244.8	11,910	1,631.5	.137	.72687
6.....	11.8	*	19.5	2,153.2	11,916	2,182.0	.195	1.0134
8.....	11.0	*	21.5	2,051.9	10,212	2,195.2	.215	1.0698
24.....	9.4	*	26.8	1,864.8	8,622	2,310.7	.268	1.2291
48.....	8.2	*	74.2	1,718.0	7,370	5,468.5	.742	3.1800
72.....	7.0	*	303.2	1,578.2	6,159	18,695.0	3.032	11.8230

*Moulds formed.

EXPERIMENT No. 2.

Weight lemons taken, 983 grams. Sugar, 580 grams. Water to make 10.707 c. c.

Hours in Container.	Depth of Solution, Cm.	Acidity, C.C. N_2NaOH Per 100 C.C.	M. M. Zinc per 100 C.C.	Total Area Exposed, Sq. Cm.	Total Volume in C.C.	Total Zinc Dissolved, Milligrams.	Zinc Dissolved, Milligrams.	
							Per C. C.	Per Sq. Cm.
2.....	20.1	27.5	2.43	1,884.23	10,707	259.15	.0242	.1375
4.....	18.9	29.0	2.52	1,802.40	9,979	251.5	.0252	.1305
6.....	17.85	30.0	2.91	1,720.98	9,316	271.1	.0291	.1575
8.....	16.7	30.0	3.00	1,641.07	8,665	280.0	.0300	.1585
12.....	15.6	30.0	3.50	1,522.08	8,030	281.1	.0350	.1847
24.....	14.3	30.0	8.15	1,430.00	7,060	575.4	.0815	.4024

First day in bucket.

EXPERIMENT No. 3.

Citric acid, 19.49 grams (anhy.). Sugar, 256 grams. Water to make 10 litres.

Hours in Container.	Depth of Solution, Cm.	Acidity, C.C. N_6NaOH Per 100 C.C.	M. M. Zinc per 100 C.C.	Total Area Exposed, Sq. Cm.	Total Volume in C.C.	Total Zinc Dissolved, Milligrams.	Zinc Dissolved, Milligrams.	
							Per C. C.	Per Sq. Cm.
2.....	18.2	18.0	6.4	1,721.	9,512	606.7	.0640	.3537
4.....	17.2	17.5	10.86	1,641.07	8,838	959.7	.1086	.5948
6.....	16.2	16.5	15.04	1,559.98	8,322	1,251.4	.1504	.8024
8.....	15.2	16.0	20.6	1,482.08	7,785	1,604.0	.2060	1.082
24.....	14.2	13.0	56.1	1,405.76	7,060	3,980.4	.5610	2.819

First day in bucket.

EXPERIMENT No. 4.

Weight Citric Acid taken, 27.0 grams. Sugar, 290 grams. Water to make 10 litres.

2.....	18.1	20.5	16.88	1,721.0	9,512	1,605.6	.1688	.9329
4.....	17.1	20.0	31.64	1,641.07	8,838	2,796.0	.3164	1.704
6.....	16.0	18.5	47.0	1,548.8	8,186	3,847.4	.470	2.484
8.....	15.0	17.5	58.0	1,470.6	7,565	4,387.0	.580	2.984
24.....	13.9	11.0	114.0	1,381.76	6,942.5	7,914.0	1.140	5.711

Second day in bucket.

EXPERIMENT No. 5.

Weight Citric Acid taken, 27 grams. Sugar, 290 grams. Water to make 10 litres.

2.....	18.3	21.0	34.6	1,736.00	9,512	3,291	.346	1.895
4.....	17.2	19.0	69.2	1,641.07	8,838	6,115	.692	3.726
6.....	16.2	17.0	87.6	1,559.98	8,322	7,290	.876	4.673
24.....	15.0	11.5	162.4	1,470.6	7,565	12,286	1.624	8.358

Third day in bucket.

EXPERIMENT No. 6.

Weight lemons taken, 960 grams. Sugar, 580 grams. Water to make 10 litres.

2.....	18.2	24.0	1.2	1,721	9,512	114.14	.012	.06632
4.....	17.2	24.0	1.6	1,641.07	8,838	141.40	.016	.08616
6.....	16.1	23.0	3.5	1,550.2	8,300	290.5	.035	.18742
24.....	15.0	21.0	15.0	1,470.6	7,565	1,109.0	.210	.754

Second day in bucket.

EXPERIMENT No. 7.

Weight lemons taken, 952 grams. Sugar, 580 grams. Water to make 10 litres.

2.....	18.2	24.0	1.8	1,721.0	9,512	171.2	.018	.09948
4.....	17.2	24.0	5.10	1,641.07	8,838	450.7	.051	.2746
6.....	16.1	23.0	7.50	1,550.2	8,300	622.5	.075	.4016
8.....	15.0	22.1	9.10	1,470.6	7,565	688.4	.091	.4683
24.....	13.9	20.9	29.94	1,385.76	6,942	2,078.6	.2994	1.500

Third day in bucket.

TABLE No. 8.

	Per 100 C.C. Equivalent to grams Zinc.	Per 100 C.C. Equivalent to grams Zinc Citrate.
Experiment No. 1—Lemonade—		
At end of 24 hrs.....	.268	.7843
At end of 48 hrs.....	.742	2.1715
At end of 72 hrs.....	3.032	8.873
Experiment No. 2—Lemonade—		
24 hrs. first day.....	.0815	.2386
Experiment No. 6—Lemonade—		
24 hrs. second day.....	.2100	.6299
Experiment No. 7—Lemonade—		
24 hrs. third day.....	.2994	.8762
Experiment No. 3—Lemonade—		
Citric acid, 24 hrs.....	.5610	1.643
Experiment No. 4—Lemonade—		
Citric acid, 24 hrs.....	1.140	3.336
Experiment No. 5—Lemonade—		
Citric acid, 24 hrs.....	1.624	4.71

Report from Drug Laboratory.

DETERIORATION OF SOME STANDARD PHARMACEUTICALS.

BY H. E. BARNARD AND IVY L. MILLER.

In the operation of a laboratory devoted to the enforcement of the pure food and drug laws, many problems constantly arise. Some of them concern manufacturers' ethics, others simple honesty, others the method and technique of production and distribution, and still others involve purely chemical problems that can only be understood and adjusted after study in a laboratory. The chemist who deals both with food and drugs is confronted with very puzzling conditions. Until recently there have been no standards of composition for foods, while the character of drugs has been carefully regulated for more than eighty years. The national Pharmacopoeia, since its first publication in 1820 has been accepted by pharmacists and physicians alike as authority upon drugs, their method of assay and their standard of purity. Druggists are as a class educated men. Most of the states require that every drug store have in its employ a registered pharmacist or a man who has had special training of a collegiate grade which is designed to prepare him for his work. Indeed the druggist looks upon his business as a profession, and holds that it takes rank with that of the physician. In view of these facts it would be supposed that the examination of standard pharmaceuticals would show but little departure from the standards laid down in the United States Pharmacopoeia or those equally reliable and valuable authorities, the U. S. Dispensatory and National Formulary. A brief study of the results obtained in any laboratory devoted to the assay of the medicinal preparations prepared and dispensed by the drug trade, shows a surprising departure from these conditions. To be specific, in my laboratory during the last two years we have analyzed several thousand common preparations which are found in every drug stock and are constantly dispensed. We have, for instance, analyzed 330 samples of Tincture of Iodine. We have found of that number but 113 to contain the amount of iodine required by the Pharmacopoeia, namely 6.86 grams of iodine to 100 cubic centimeters; 65.7 per cent of the samples contained less than this amount. Of 226 samples of Spirits of Camphor analyzed but 26.1 per cent contained the required 100 grams of camphor to the liter of solution. Of 251 samples of Tincture of Ferric Chloride but 29.9 per cent contained 13.28 per cent of

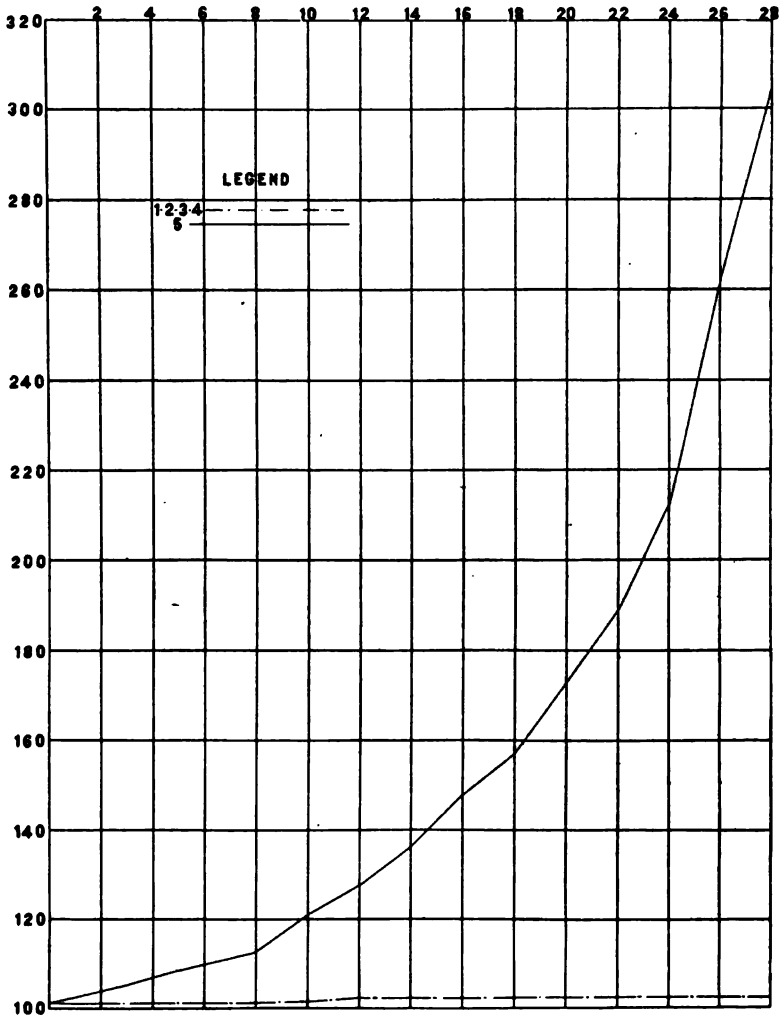
the anhydrous salt, corresponding to 4.58 per cent of metallic iron. Of 236 samples of Lime Water analyzed but 52.5 per cent contained .14 of 1 per cent of pure calcium hydroxide. This departure from the standards as set forth by the druggist's authorities are so abnormal that the analyst is compelled to accept the fact that some conditions other than that of fraudulent intent or gross carelessness must obtain. In order to arrive, if possible, at the correct reason for the low grade of these and other standard preparations it has been our custom not to prosecute at once the druggist dispensing the impure article but to correspond with him for the purpose of determining why he violated the law by the sale of impure goods. To this end we have sent out many hundred letters and have received almost without exception, very prompt replies, but strange to say an analysis of these replies throws but little light on the question and offers no solution to the problem. Of course many dealers employ old formulas, others lay the blame upon the wholesaler. But few admit carelessness either in preparation or storage. The most general explanation the druggists offer is that the goods have deteriorated since their preparation. We cannot control from a laboratory the technique of manufacture at the druggist's store, the use of old formulas or the employment of crude material, nor can we compel the druggists to adopt new formulas. If, however, it is a fact that druggists' preparations deteriorate in storage and that they have no control over this cheapening of the quality of their output, the chemical laboratory can offer assistance and determine what goods do deteriorate and under what conditions, and can suggest methods of handling which will prevent such deterioration.

To this end we have been studying for sometime past a series of standard preparations prepared exactly as directed in the Eighth Decennial Revision of the U. S. Pharmacopoeia from pure chemicals, and kept as closely as possible under the same conditions of light and temperature as obtain at the ordinary drug store. The results of this investigation are most interesting. The drugs studied were Tincture of Iodine, Lime Water, Ammonia Water and Spirits of Camphor.

The Tincture of Iodine was prepared by triturating 70 grams of iodine and 50 grams of potassium iodide to a coarse powder and transferring it to a graduated flask. The mortar was rinsed with successive portions of 95 per cent alcohol, which was poured into the flask. Alcohol was then added until the finished product measured one liter. The solution was complete at the end of the second day.

This tincture so prepared assayed 101.2 per cent U. S. P. strength, calculated upon a basis of 6.86 grams of iodine to 100 cubic centimeters. The solution was then divided into five portions of 260 cubic centimeters each. One portion was placed in a glass stoppered reagent bottle and wrapped in black paper; the second portion was placed in a similar bottle but was not protected from the light; the third portion was placed in a similar bottle and exposed to the direct sunlight. Another portion was placed in a bottle stoppered with an ordinary velvet cork, and the final portion was placed in an unstoppered bottle. Two weeks after preparation the contents of each bottle was analyzed. Practically no change was noted in the composition of the first four samples, but the sample which had been left uncorked had increased its strength about 4 per cent. One month after date of preparation, the first four samples were exactly the same as when made, but the fifth sample had increased its strength 7 per cent. Two weeks later no change was noted except with the last sample, which was now 112.6 per cent U. S. P. and two weeks later, or two months after manufacture, 121.1 per cent U. S. P. Ten weeks after manufacture an increase of strength of about 1 per cent was noted in the first four samples. The uncorked sample had, however, increased to 127.7 per cent, and two weeks later to 136.1 per cent. Two weeks later, while no change was noticed in the first four samples, the fifth sample registered 147.8 per cent, and when the preparations were four months old the fifth sample had concentrated to 157 per cent. In the next two weeks its strength was 172.8 per cent, at the end of five months 189 per cent, and at the end of seven months the iodine content corresponded to 306.0 per cent U. S. P. No precipitation of iodine was noted in the bottom of the bottle, nor was there any appreciable sublimation upon the sides of the bottle, although a slight amount of potassium iodide deposited in the neck of the bottle. Upon dilution in five volumes of water the solution was still perfect. At eight months since the work was started the bottle No. 1, tightly corked and protected from light, registers 102.3 per cent, an increase of 1.1 per cent over its original volume. The second sample, unprotected from light is the same, the third sample exposed to direct sunlight now reads 103.4 per cent, an increase in strength of 2.2 per cent. The fourth sample, kept in a cork-stoppered bottle, now reads 103.8 per cent, an increase in strength of 2.6 per cent. These figures are exactly contrary to the views held by the drug trade. So far as we can determine it is the opinion of dispensing

TINCTURE IODINE



The numbers 100 to 350 represent percentages U. S. P.

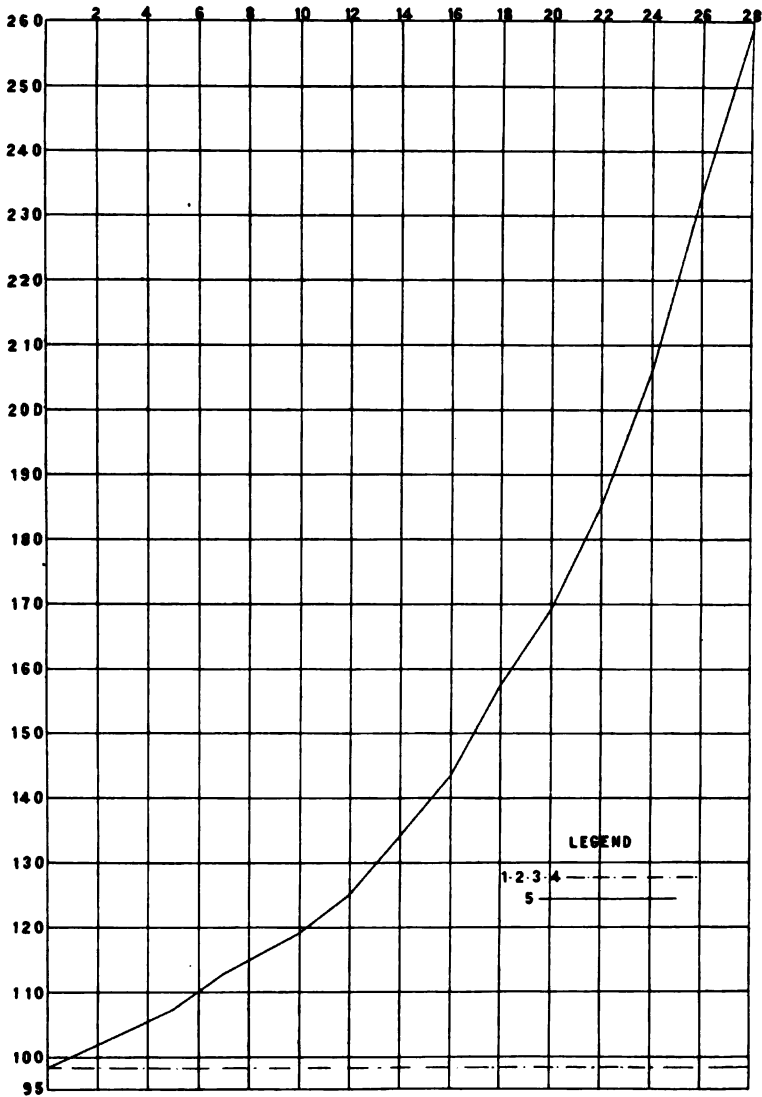
The numbers 2 to 28 indicate weeks.

The numbers of the legend, viz., 1 to 5, are those of the preparations mentioned in the text.

pharmacists that tincture of iodine deteriorates upon standing, and that the iodine volatilizes so that at the end of six months an appreciable less amount of iodine will be present than when freshly made. On the contrary, so far as we have observed, there is no volatilization of iodine, but a very marked concentration because of the evaporation of alcohol from the unprotected solution.

Spirits of Camphor was made by dissolving 100 grams of pure camphor in 800 cubic centimeters of 95 per cent alcohol, filtering and adding sufficient alcohol through the filter to make the volume of the finished product one liter. The spirits of camphor so prepared when analyzed was found to be 98.3 per cent. U. S. P. strength. The method of analysis employed was to observe the reading in a 100 millimeter tube in a Schmidt & Haensch triple-field polariscope, accepting as a basis for reading the fact the Pharmacopoeia preparation of spirits of camphor will show a plus reading of 12 under similar conditions. The solution was then divided into five portions and placed in the same style of bottles similarly protected as in the case of the tincture of iodine. At the end of two weeks there was no change in the first four samples; the fifth sample had, however, increased in strength 5 per cent. Throughout the experiment, which extended over twenty-two weeks and involved twelve analyses of each sample, there was no appreciable change in the character of the first four samples. The fifth sample, however, increased in strength rapidly, and at the end of eight weeks it was 119 per cent U. S. P., at the end of twelve weeks 134.1 per cent, at the end of sixteen weeks 157.5 per cent, at the end of twenty weeks 185.0 per cent, and at the present time reading 259.17 per cent. The increase is not rapid at first, but as the solution becomes more concentrated the volatilization of the alcohol seems to take place more rapidly, so that while the percentage of increase was low the first two weeks, the percentage of increase at the end of eighteen weeks was 11.6, twenty weeks 15.9, twenty-two weeks 21.6, and a graphic representation of these figures shows these changes very vividly. As in the case of the tincture of iodine, the drug trade is of the opinion that spirits of camphor loses strength because of volatilization of the camphor gum, and again our results show that opinion, we believe, to be entirely erroneous. We have noted no volatilization or deposit of camphor on the sides of the bottle. The solution is still perfect, and to all appearances the only change in the preparation has been that caused by concentration of the solution due to volatilization of alcohol.

SPIRITS CAMPHOR



The numbers 95 to 260 represent percentages U. S. P.

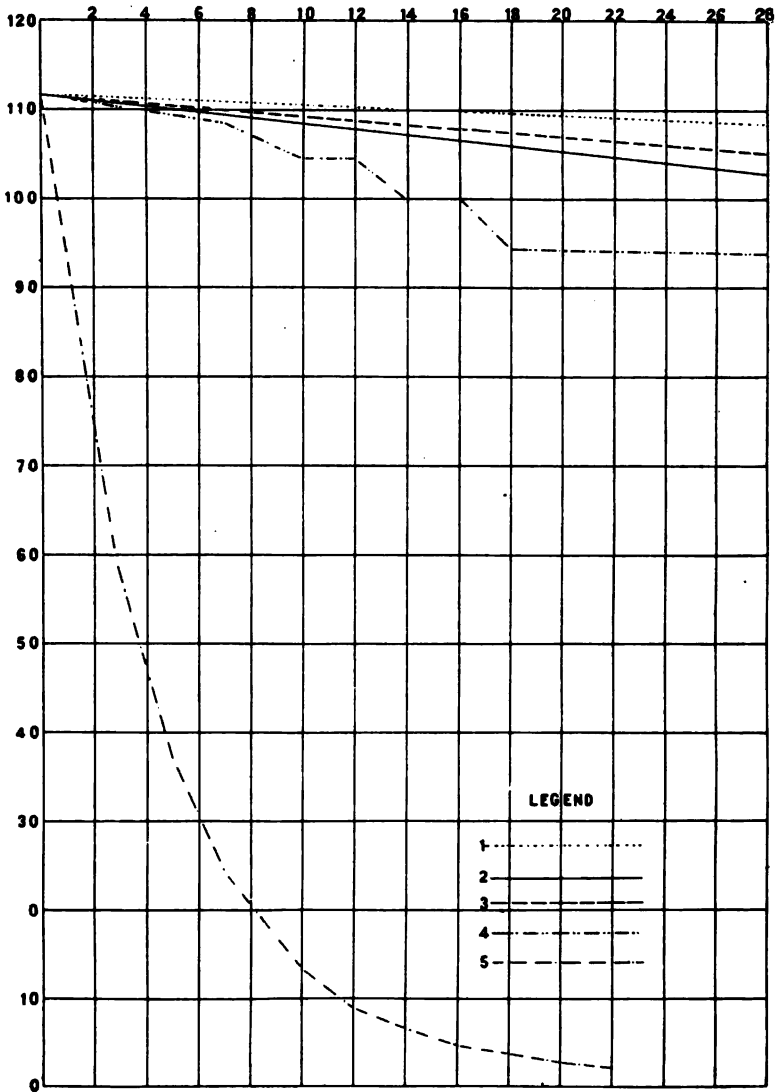
The numbers 2 to 28 indicate weeks.

The numbers of the legend, viz., 1 to 5, are those of the preparations mentioned in the text.

According to the Pharmacopoeia, Ammonia Water is an aqueous solution of ammonia containing 10 per cent by weight of gaseous ammonia. As made up, the solution we prepared contained 11.7 per cent by weight of ammonia gas, corresponding to 111.7 per cent U. S. P. strength. This was divided into five portions and placed in bottles under similar conditions as before described. At the end of two weeks there was no change in the first four samples. The fifth sample in the uncorked flask at this time, however, had deteriorated nearly 50 per cent and now contained but 5.92 per cent of gaseous ammonia. Two weeks later it contained but 3.71 per cent, and at the end of two months but 1.33 per cent, corresponding to 13.3 per cent U. S. P. At the end of three months but 0.65 per cent of ammonia gas was present, and at the end of four months but 0.36 per cent was there. At the end of the fifth month the solution was but 2.3 per cent U. S. P., and was not further analyzed. At this time sample No. 1 was 108.4 per cent U. S. P., representing a deterioration of 3.3 per cent. Samples Nos. 2 and 3 had likewise deteriorated but little and were still well above pharmacopoeial requirements. Sample No. 4, which was kept in a bottle with a cork stopper, showed no greater deterioration than the other samples up to the end of the second month. At that time, however, it became difficult to keep the cork stopper in the bottle, the action of the ammonia gas on the cork producing a tendency to dry it out. Under these unsatisfactory conditions at the present time the ammonia shows a rating of 93.8 per cent U. S. P. Our results show that ammonia water, if kept in tightly stoppered glass bottles, no matter whether exposed to the light or not, deteriorates but slightly upon standing. Our figures also show that ammonia water kept in a close corked bottle does not deteriorate rapidly. If, however, the container is not stoppered, rapid deterioration takes place, and in a short time the solution becomes of no value for medicinal purposes.

No one preparation causes the druggist more trouble than his Lime Water. As prepared by the druggist, it is made by slaking ordinary commercial lime with the addition of water, with occasional agitation for an hour. After the suspended particles have subsided, the supernatant liquid is decanted and rejected. Distilled water is then added to the residue and the mixture thoroughly shaken. This process is repeated for several days and at length the liquid holding the calcium hydroxide in suspension is poured in a glass-stoppered bottle. The solution we studied was made under

AQUA AMMONIA



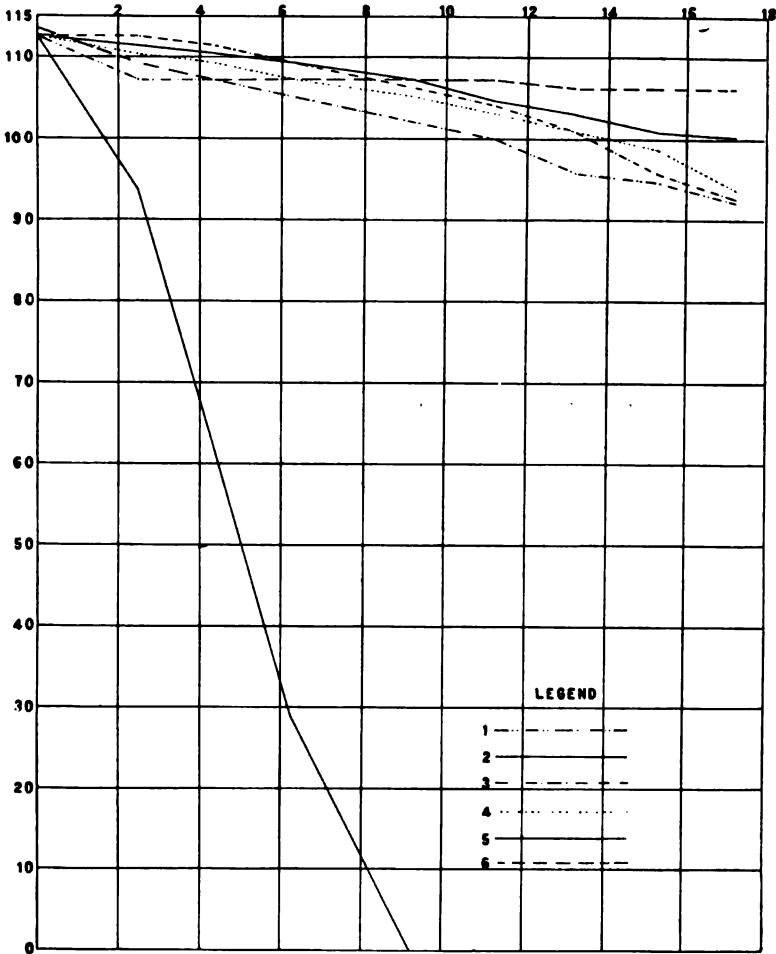
[The numbers 0 to 115 represent percentages U. S. P.

The numbers 2 to 18 indicate weeks.

The numbers of the legend, viz. 1 to 6, are those of the preparations mentioned in the text.

these conditions, and at the time of preparation assayed 112.6 per cent U. S. P. strength, corresponding to 0.1536 per cent of pure calcium hydroxide. This solution was then divided into five portions under the same conditions as before recited. No precipitated lime, however, was allowed to remain in any of the bottles, the solution being filtered before the samples were prepared. A sixth sample was made according to the U. S. P. directions, the excess of lime being left in a bottle which was shaken between titrations during the entire period. This sample was 113.6 per cent U. S. P. At the end of two weeks but little change was noted in the first samples. Sample No. 5, however, showed a loss of 20 per cent strength, and in the following two weeks showed a loss of 30 per cent. At the end of six weeks it was 28.8 per cent U. S. P., and at the end of two months the clear solution was neutral to sulphuric acid and contained no calcium hydroxide. At this time the other samples were still well above the pharmacopoeial requirements, although a loss of from 5 to 10 per cent was evident in each case. Sample No. 6, which contained undissolved lime, was at this time of the same strength as sample No. 2, viz., 107.3 per cent U. S. P. At the end of ten weeks, at which time the solutions were exhausted, sample No. 1 showed 92.2 per cent, No. 2, 100.5 per cent, No. 3, 92.6 per cent, No. 4, 93.6 per cent, and sample No. 5, 106.3 per cent. At the end of 28 weeks the strength of sample No. 6 has increased to 108.4 per cent U. S. P. From these results it is apparent that lime water properly prepared and kept in a close-stoppered bottle containing some undissolved lime, will deteriorate very slowly and will preserve its strength at least six months after preparation, a much longer time than is usually necessary in the case of a dispensing druggist. A study of the results obtained is interesting, chiefly because of the fact that it proves the ability of the druggist to make and keep in stock standard pharmaceuticals which are commonly and erroneously supposed to deteriorate rapidly. The results of the work with the lime water and ammonia water appear to prove that the uniformly low grade of these products as dispensed is due to carelessness in storage; but, on the contrary, the study of tincture of iodine and spirits of camphor shows this explanation to be not founded on fact, and the druggist must offer some other explanation of the character of these preparations. The results of these investigations are so positive in character, so helpful to us in the enforcement of the Pure Drug Law, and have been received so cordially by the drug trade as explaining hitherto little understood re-

LIME WATER



The numbers 0 to 120 represent percentages U. S. P.

The numbers 2 to 28 indicate weeks.

The numbers of the legend, viz., 1 to 5, are those of the preparation mentioned in the text.

actions, that we have started another series of experiments which will, we hope, be completed during the coming winter. We are now studying the rate of deterioration of tincture of ferric chlorid and sweet spirits of nitre. We have undertaken to determine the rate of oxidation and volatilization of such essential oils as the oils of lemon, orange, gaultheria, peppermint, turpentine, etc., questions of great importance to the dispensing druggist and, as well, to the manufacturers of food products. We believe that such work as this will establish the value of food and drug control laboratories to the manufacturing and retail trade, and that they will eventually be appreciated as instruments designed to help and advance their interests instead of mere accessories to legal prosecutions.

DRUGS.

That portion of the Pure Food and Drug Law of Chapter 104, Acts 1907, provided that the section relating to the labeling of drugs should not be operative until March 1, 1908. It was supposed that a delay in enforcing the law until one year from the date of its enactment would give the druggists ample opportunity to dispose of old stock and to relabel preparations which did not properly declare the presence of alcohol, opium and other inhibited drugs and narcotics. It became apparent, when the year was nearly up, that but little had been done by the drug trade toward meeting the new conditions which were confronting them after March 1. In an endeavor to be of assistance to the trade, several circular letters were sent out for the purpose of making the law more plain, and especially to clear up points concerning the use of the guarantee label. A circular dated February 10, 1908, read as follows:

To the Drug Trade of Indiana:

There is still much doubt among retail druggists as to the correct interpretation of the Pure Drug Law, and especially to that section which takes effect March 1, 1908. In order that you may understand the position taken by this department as to the meaning of the law and the requirements which we expect the drug trade to meet, the following statement may be of value:

THE GUARANTEE LABEL.

Some retailers are under the impression that a guarantee label must appear on every package. This is a mistake. The law requires neither a guarantee label nor serial number. The guarantee is a protection against

prosecution only in the case of goods in the *original package*, but as soon as the box is opened, stopper drawn or seal detached, the guarantee ceases and all responsibility for the character of the goods passes from the manufacturer or jobber to the retailer. *It is, therefore, useless to ask for guarantee for use on broken packages.*

SHELF BOTTLES.

Shelf bottles or stock bottles containing extracts, tinctures, etc., need no label as to alcohol, cocaine, morphine, or other alkaloid content. The statement as to inhibited ingredients must appear on the package delivered to the purchaser and not on the stock or shelf bottle. *Prescriptions written by physicians need not be so labeled.*

FLAVORING EXTRACTS, ETC.

Flavoring extracts, such as essence lemon and orange, extract vanilla, etc., are classed as food products and no statement as to the alcohol content is required. Tooth and face powders, unmedicated soaps, cold creams, disinfectants, mineral waters, acids, alkalies and chemicals contain no alcohol, narcotics or opiates, and need no label. Toilet waters, perfumes, bayrum and other alcoholic toilet preparations not used or sold for the cure, mitigation or prevention of disease, need no label.

All inquiry as to other features of the law which may not be clearly understood will be gladly supplied you.

Yours very truly,

H. E. BARNARD,
State Food and Drug Commissioner.

There was much energetic work on the part of the trade during the last month prior to the taking effect of the law, and a great deal of work was done by the wholesale and retail trade in relabeling preparations, but it appeared that much stock could not be properly labeled because of the fact that manufacturers had gone out of the business and that the formulas were lost. In order to render still further assistance to a badly disturbed trade, the following circular of information was issued:

INDIANA STATE BOARD OF HEALTH

CIRCULAR OF INFORMATION TO THE DRUG TRADE.

STATE LABORATORY OF HYGIENE,
DEPARTMENT OF FOOD AND DRUGS,
STATE HOUSE, INDIANAPOLIS.

The section of the Pure Food and Drug Law relating to the misbranding and labeling of drugs reads in part as follows:

Chapter 104, Acts 1907.

Section 5. That the term misbranded, as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food and drugs, the *package or label of which shall bear any statement, design or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular*, and to any food or drug product which is falsely branded as to the state, territory or country in which it is manufactured or produced. That for the purpose of this act an article shall also be deemed to be misbranded: In the case of drugs:

First. If it be an imitation of or offered for sale under the name of another article;

Second. If the contents of the package as originally put up shall have been removed, in whole or part, and other contents differing in quality or quantity from such original contents shall have been placed in such package, *or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphine, opium, cocaine, heroin, alpha, or beta eucaine, chloroform, cannabis indica, chloral hydrate, acetanilid, phenacetine, antipyrine, or any derivative or preparation of any such substance or substances contained therein.*

The energetic work of wholesale and retail druggists has put most of their stock in shape to comply with these requirements. But in some cases it has been impossible to secure corrective stickers or new labels, either because of the age of the stock, the failure of the manufacturing house, or the loss of formulas. In such instances we have endeavored to secure the inhibited drug content and in this circular to supply to the drug trade information that will make it possible to put back in stock all goods now withheld from sale.

The formulas given have been obtained from many sources. Some were furnished by proprietors who had not replied to individual requests; others were obtained from former members of manufacturing firms; still more were collected from the literature of drug analyses, and in many cases it has been necessary to analyze the article at this laboratory. Because of their varied source the formulas given may differ somewhat from those obtained by other analysts, but we believe that as a whole they express very closely the composition of the goods as they are found on the Indiana market.

After the preparations now not displayed for sale are plainly marked on the face of the principal label with the inhibited drug content, as herein listed, they may again be put in stock.

It has not been possible to obtain satisfactory formulas for some very old preparations that have had a limited sale in a local way. If there still remain on hand stocks of these goods of any value, upon receipt of an original package we will analyze the preparation and furnish the formula required.

Whenever possible, the list is arranged alphabetically according to the name of the manufacturer. Goods known only by a proprietary name will be found listed under the first letters of that name.

All alcohol percentages are given in terms of per cent by volume. The drug contents are given either in grains per ounce or grains per tablet or powder. Preparations marked O. K. contain no inhibited drug and require no supplementary label.

There still seems to be some doubt among druggists as to the meaning of portions of the law. The following explanatory statements are therefore made:

THE GUARANTEE LABEL.

Some retailers are under the impression that a guarantee label must appear on every package. This is a mistake. The law requires neither a guarantee label nor serial number. The guarantee is a protection against prosecution only in the case of goods in the *original package*, but as soon as the box is opened, stopper drawn or seal detached, the guarantee ceases and all responsibility for the character of the goods passes from the manufacturer or jobber to the retailer. *It is, therefore, useless to ask for guarantees for use on broken packages.*

SHELF BOTTLES.

Shelf bottles or stock bottles containing extracts, tinctures, etc., need no label as to alcohol, cocaine, morphine, or other alkaloid content. The statement as to inhibited ingredients must appear on the package delivered to the purchaser and not on the stock or shelf bottle. *Prescriptions written by physicians need not be so labeled.*

FLAVORING EXTRACTS, ETC.

Flavoring extracts, such as essence lemon and orange, extract vanilla, etc., are classed as food products and no statement as to the alcohol content is required. Tooth and face powders, unmedicated soaps, cold creams, disinfectants, mineral waters, acids, alkalies and chemicals contain no alcohol, narcotics or opiates, and need no label. Toilet waters, perfumes, bayrum and other alcoholic toilet preparations not used or sold for the cure, mitigation or prevention of disease, need no label.

All inquiry as to other features of the law which may not be clearly understood will be gladly supplied you.

Yours very truly,

H. E. BARNARD,

State Food and Drug Commissioner.

- A. B. C. Headache. 210 gr. Acetanilid to oz.
 Abbey's Eff. Salt. O.K.
 Abbott's Angostura Bitters. 50% Alc.
 Aro. Bitters. 50% Alc.
 Rheu. Remedy. 24% Alc.
 Eff. Saline Lax. O.K.
 Abbott Saline Lax. O.K.
 Absorbine. 50% Alc.
 Abyssinian Tonic. 7.5% Alc.
 Accacian Balsam. 12.5% Alc. 4 Gr. Opil. in oz.
 Acer's English Cough Med. 9% Alc. 3m. Chlorof. to oz.
 Acker's Blood Elix. 17% Alc.
 English Remedy. 8% Alc. 3m. Chlorof. to oz.
 Acme Blood Purif. 8% Alc.
 Cholera Cure. 53.4% Alc. 1.2 gr. Opil. to oz.
 Corn Cure. O.K.
 Cough Syr. 2.5% Alc.
 Kidney Comp. 11.5% Alc.
 Nerve & Bone Lin. O.K.
 Oint. O.K.
 Pain Cure. 79% Alc. 12m. Ether, 4.5m. Chlorof. to oz.
 Porous Plaster. O.K.
 Tooth Po. O.K.
 Vegetable Soap. O.K.
 Veg. Cath. Liver Pills. O.K.
 Worm Candy. O.K.
 Adam's Cough Syr. 30m. Alc. 4m. Chlorof. $\frac{1}{2}$ gr. Morph. 4 gr. Acetanilid to oz.
 Adams Keno Koof and Kold. 30m. Alc. 4m. Chlorof. to oz.
 A. D. S. Catarrh Cure. Inh. 3.8 gr. Chloritone to oz.
 Celery Comp. 10% Alc.
 Codliver Oil Comp. 17% Alc.
 Kidney Remedy. 17% Alc.
 Pelvetone. 20% Alc.
 Soothing Syr. O.K.
 Agnew's Cryene. O.K.
 Ague Conqueror. 50% Alc.
 A. J. M. O.K.
 Al Borak Cure. 3% Alc.
 Albro's Heart Tabs. O.K.
 Alexander's K. & L. Tonic. 20% Alc.
 Rheu. and Malaria Cure. 2% Alc.
 Alkaseptin. 6.25% Alc.
 Alkvis. 20% Alc.
 Alpen Seal. O.K.
 Allan's Comp. Ext. Celery. 21.6% Alc.
 Comp. Ext. Damiania & Saw Palmetto. 27.5% Alc.
 Comp. Soothing Syr. 12.5% Alc. $\frac{1}{2}$ gr. Morph. to oz.
 Emulsion C. L. O. 19% Alc.
 Tasteless C. L. O. 18% Alc.

Allen-Pfeffer's Anti-Fat. O.K.

Anti-Pain and Quinine Tabs. 128 gr. Acetanilid to oz.
 Antiseptic. 59% Alc. 6.71 grs. Chloral to oz.
 Arnica Lini. 34% Alc. 8.5m. Tinc. Opil. 4.1m. Chlorof. to oz.
 Baby Cough Syr. 10% Alc. 2.16m. Chlorof. to oz.
 Baby Cord. 12.5 Alc. 1-29th gr. Morph. to oz.
 B. I. & W. 12% Alc.
 Blkberry. 13.5% Alc. 1.09 gr. Opil. to oz.
 Brain Relief. 31.2% Alc. 11 gr. Acetanilid to oz.
 Cascara Lax. Cord. 12.5% Alc.
 Castoria. 4% Alc.
 Celery Comp. 21.6% Alc.
 Cholera and Diarrhoea Cure, 25% Alc. 2.19 grs. Opil. 12.4m. Chlorof. to oz.
 Cold and Headache Tabs. 1.25 gr. Acetanilid. 1-54 gr. Morph. Sulph. to oz.
 Comp. Ext. Buchu. 31.25% Alc.
 Carbolized W. Hazel Arnica and Glyc. Saive. O.K.
 Comp. Ext. Damiania. 27.5% Alc.
 Comp. Ext. Red Clover, 20% Alc.
 Corn Cure. 25% Alc. 120m. Fl. Ext. Can. Ind. to oz.
 Dandruff Cure. 4.1 gr. Chloral to oz.
 Dysp. and Heart Burn Cure. 1.9m. Chlorof. to oz.
 Electric Lini. 3.42 gr. Chloral, 8.8m. Ether. 9m. Chlorof. to oz.
 Eye Water. 1 gr. Morph. Sulph. to oz.
 Female Tonic. 11.64% Alc.
 Fluid Cough Grass. 25% Alc.
 Foot Po. 44 gr. Acetanilid to oz.
 Gin and Buchu. 27.25% Alc.
 Hair Tonic. 3% Alc.
 Head Ache Wafers. 306.25 gr. Acetanilid to oz.
 Jap. Tooth Drops. 44m. Chlorof.
 K. & L. Cure. 10% Alc.
 Lax. Chill Tonic. 8 gr. Acetanilid.
 Liver Invig. 15% Alc.
 Lung Balsm. 10% Alc.
 Magic Tooth Ache Drops. 66% Alc. 121 gr. Chloral to oz.
 Nerve and Bone Lini. O.K.
 Pain Balm. 0.5 gr. Morph. Sulph. to oz.
 Pile Oint. 13.46 gr. Opil. to oz.
 Pile Suppos. 7.66 gr. Opil. to oz.
 Prickly Ash, Poke Root, Still. 11% Alc.
 Pure C. L. O. 19% Alc.
 Rheu. Comp. 17.5% Alc.
 Root Beer Ext. 10 Alc.
 Sarsa. Ext. 22% Alc.
 Spavin Cure. 50% Alc.
 Syr. Figs. 5% Alc.
 Syr. Hoarhound Honey and Tar. 13% Alc.
 Soothing Syr. 12% Alc. $\frac{1}{4}$ gr. Morph. to oz.

- Tar Tolu and W. Cherry. 17.7% Alc.
 Tar and W. Cherry. 10% Alc.
 Tasteless Teething Po. 2.73 gr. Morph. Sulph. to oz.
 Tooth Ache Wax. 1.21 gr. Morph. Sulph. to oz.
 Tooth Wash. 47% Alc.
 Vermifuge or Worm Syr. 6% Alc.
 White Pine. 10% Alc. 1.37m. Chlorof. to oz.
 Windsor Tooth Ache Drops. 60% Alc. 1.33 gr. Opil. to oz.
 White Pine and Tar. 9.5% Alc. 1.1m. Chlorof. to oz.
 American Corn Cure. 1.6% Can. Ind.
 Tooth Drops. 48% Alc. 25% Chlorof.
 Anti-Grippine. 2 gr. Acetanilid.
 Antikamnia and Heroin. 7.33 gr. Heroin. 366 gr. Phenacetin to oz.
 Alangine. 2.5 gr. Acetanilid, $\frac{1}{2}$ gr. Can. Ind. to oz.
 Anderson's Dermador. 60% Alc.
 Andrew's Relief. 56% Alc., 1 gr. Opil. to oz.
 Angeline. 50% Alc.
 Angiers Petrol. Emul. O.K.
 Anheuser-Busch Malt Nutrine. 2% Alc.
 Anti-Apoplectine. 21% Alc.
 Diuretic. 14.5% Alc.
 Antikamnia. 72% Acetanilid.
 Antiseptic Lotion. Alc. 3%.
 Refrigerant. 70% Alc.
 Anti-Uric for Rheu. 20% Alc.
 Apetol. O.K.
 Arabian Specific. O.K.
 Arbolum. 5% Alc.
 Argon Oil. O.K.
 Armistead Ague Tonic. 5.5% Alc.
 Armour's Nutrine Wine of Beef Peptone. 20% Alc.
 Arnold's Bromo Pepsin. 5 gr. Acetanilid to dr.
 Cough Killer. 15% Alc. 0.2 gr. Morph. 0.8m. Chlorof. to oz.
 Soothing and Quieting Cord. 18% Alc. 1.8 gr. Opil. to oz.
 Arsenaro. O.K.
 Arthur's Camph. Quinine Tabs. O.K.
 Nerve and Heart Tabs. O.K.
 Artol. 40% Alc.
 Asthmaline. 10% Alc.
 Athlophoros. O.K.
 Atwood's Jaundice Bitters. 17.5% Alc.
 Aunt Dinah Herb Tea. O.K.
 Lydia's Anastringent. 0.5 gr. Opil. to each Suppos.
 Ayres Cherry Pectoral. 17% Alc. 1-6 gr. Heroin to oz.
 Comp. Con. Ext. Sarsa. 20% Alc.
 Hair Vigor. 15% Alc.
 Malarial and Ague Cure. 20% Alc.
 Sarsa. 17% Alc.
 Baby Own Tab. O.K.
 Bailey's Dysp. Tabs. O.K.

- Bailey's Saline Aperient. O.K.
 Baker's Bamboo Brier Comp. 4% Alc.
 Baker's C. L. O. O.K.
 Baker's Emul. C. L. O. O.K.
 Baker's Pain Panacea. 85% Alc.
 Ballard's Horehound Syr. 10% Alc. 4m. Chlorof. 1 4-5 gr. Opii. 7-50 gr.
 Morph. to oz.
 Ballard's Snow Lini. O.K.
 Ballentine Remedy (The). O.K.
 Baldwin's Arnica Lini. 64% Alc., 10m. Chlorof. to oz
 Balmwort. 25% Alc.
 Bar Ben. O.K.
 Barker's Hirsutes. 33% Alc.
 Barker's Lini. O.K.
 Barkola. 5% Alc.
 Barrel's Indian Lini. 40% Alc.
 Berry's Antiseptic Mixt. O.K.
 Berry's Tricopherous. O.K.
 Bateman's Drops. 50% Alc. 2 gr. Morph. to oz.
 Bath Isls. 4% Alc.
 Baxter's Mandrake Bitters. 11% Alc.
 Bayer's Penetrating Oil. O.K.
 Bazin's Depilatory. O.K.
 Bee's Lax. Cough Syr. 2% Alc.
 Begg's Cherry Cough Syr. 5% Alc. 1½ gr. Opii. to oz.
 Begg's Diarrhoea Balsam. 1% Alc. 2 4-5 gr. Opii. to oz.
 Begg's Purifier, 15% Alc.
 Begg's Sarsa. 15% Alc.
 Wine of Life. 18% Alc.
 Belding's Cough & Lung Sarsa. 5% Alc.
 Six Prairie Herbs Cough & Lung Rem. 5% Alc.
 Skin Remedy. 27% Alc.
 W. Cherry. 5% Alc.
 W. Cherry Sarsa. 5% Alc.
 Bells Anti-Pain Killer. 86% Alc. 7m. Chlorof. 28m. Tr. Opii. to oz
 Chill Tonic. 1% Alc.
 Delight. 4% Alc.
 Pine Tar & Honey. 5% Alc.
 Syr. Codeine. 1½ gr. Codeine to oz.
 Benedicta. 10% Alc.
 Beniger's ed. Gin. 40% Alc.
 Bentley's Pain Oil. 40% Alc.
 Bergen's Asth. Cure. O.K.
 Bergmas Dr. Asth. & Cons. Cure. O.K.
 Betul-Oil. 2% Alc.
 BIF. O.K.
 Big 4 Regulator. 30% Alc.
 Big G. O.K.
 Bigger's Huckleberry Cord. 10% Alc. ½ gr. Morph. to oz.
 Biogene. O.K.

- Birney's Catarrh Po. 1½% Cocaine.
 Black's Eye Water. O.K.
 Black Catarrh. O.K.
 Blackburn's Castor Oil Pills. O.K.
 Blizzard Oil. O.K.
 Blood Wine. 14% Alc.
 Bochner's Comp. Blood Elix. 1% Alc.
 Boko. O.K.
 Boraukoo Cough Cure. 2% Alc.
 Borchert's Malt. Ext. 2% Alc.
 Borden's Malted Milk. O.K.
 Borolyptol, 8% Alc.
 Borozone. 66% Alc.
 Po. O.K.
 Bosanko Cough & Lung Cure. 7% Alc. ½m. Chlorof. ½ gr. Morph. to oz.
 Botanic Blood Balm. 16% Alc.
 Kidney Specific. 24% Alc.
 Boukocine. O.K.
 Bouschee's Syr. 2% Alc. ½ gr. Morph. to oz.
 Bovinine. 8% Alc.
 Boyce's Body Wash. O.K.
 Booth's Hyomel. 13% Alc.
 Bradfield's Female Reg. 25% Alc.
 Brady Crotine. 10% Alc.
 Brain Ease. 45% Alc. 22 gr. Acetanilid to oz.
 Brandt's Balsam. 2½m. Chlorof. to oz.
 Brazillian Balm. O.K.
 Break-UP-A-Cold Tabs. ½ gr. Acetanilid to tab.
 Brighton's W. O. W. O.K.
 British Oil. O.K.
 Bromidia. 10% Alc. 91 gr. Chloral to oz.
 Brominto. 44% Alc. 16 gr. Acetanilid. ½ gr. Codeine to oz.
 Bromo Caffeine. O.K.
 Bromo Pepsin. O.K.
 Bromo Seltzer. 22 gr. Acetanilid to oz.
 Bromoline. 2 gr. Acetanilid.
 Brou. Injec. 3% Alc. ½ gr. Opl. to oz.
 Brown's Accacian Balsam. 12% Alc. 4 drops Tr. Opl. to oz.
 Brown's Blood Purifier. 25% Alc.
 Buchu. 13% Alc.
 Cough Balsam. 12% Alc. 4 drops Opl. to oz.
 Expect. 7% Alc. 1-5 gr. Morph. to oz.
 Ginger. 75% Alc.
 Herbal Oint. O.K.
 Iron Bitters. 25% Alc.
 Iron & Quinine Bitters. 12% Alc.
 Jam. Ginger. 63% Alc.
 Panacea. 86% Alc.
 Renovating Pills. O.K.
 Restor. Assimilant. 30% Alc.

- Teething Cord. 2½% Alc. ½ gr. Morph. to oz.
 Veg. Expect. 7% Alc. 1-5 gr. Morph. to oz.
 Nerve & Bone Lini. 4m. Chlorof. to oz.
 Pain King. 29% Alc.
 Pills. O.K.
 Browning's Antiseptic Healing Balm. 48% Alc. 1m. Chlorof. 1m. Opli. 8m.
 Ether to oz.
 New Discovery. 18% Alc.
 Bruce's LaGrippe & Fever Cure. 10% Alc.
 Tonic & Blood Purifier. 5% Alc.
 Brunker's Balsam. 14% Alc. ½ gr. Opli. to oz.
 Bryant's Root Beer. O.K.
 Bucura. 30% Alc.
 Buckingham's Dye. 33% Alc.
 Bucklin's Electric Bitters. 15% Alc.
 Bull's Baby Syr. 4% Alc. 1-12 gr. Morph. to oz.
 Cough Syr. 4% Alc. ½ gr. Codeine to oz.
 W. H. Herbs & Iron. 17% Alc.
 John. Sarsa. 17% Alc.
 Veg. Worm Syr. 12% Alc.
 Burdock Blood Bitters. 22% Alc.
 Burdsall's Bucaloid. 20% Alc.
 Burk's Blk. Berry Balsam. 30% Alc.
 Cholera Spec. 68% Alc. 2½m. Opli to oz.
 Iron Tonic. 28% Alc.
 Jam. Ginger. 95% Alc.
 Lini. 66% Alc. 3m. Chlorof. to oz.
 Sarsa. & Red Clover. 20% Alc.
 Butler's Nerve & Bone Lini. O.K.
 Cabler's Root Juice. 8% Alc.
 C. C. C. 16m. Chlorof. 16m. Opli. to oz.
 C. C. G. 4% Alc.
 C. C. Suppos. 1 gr. Opli.
 Cadomen. 65% Alc.
 Calcarda. 18% Alc.
 Caldwell's Egyptian Pile Salve. 1½ gr. Opli. to oz.
 Caldwell's Syr. Pepsin. 9% Alc.
 California Catarrh Cure. O.K.
 Syr. Figs. 5% Alc.
 Golden Oil. O.K.
 Mission Lini. O.K.
 Paradise Oil. O.K.
 Prune Wafers. O.K.
 Campho-Phenique. O.K.
 Capicol. O.K.
 Capillaries Hair Tonic. O.K.
 Capudine. 8% Alc.
 Cardiol. 23% Alc.
 Carbonium. O.K.
 Carstead's Corn Checkers. 20% Can. Ind.

- Cascaria Cord. 20% Alc.
 Cascara Peptinoid. 16% Alc.
 C-A-S-E-P-A Tonic Malaria Comp. 20% Alc.
 Cascasweets. 5% Alc.
 Castoria. 3% Alc.
 Castoria Aperient Syr. 30% Alc.
 Casto's Cough Syr. 1-32 gr. Morph. Sulph. 1m. Chlorof. to oz.
 Catler's Root Juice. 8% Alc.
 Celerina. 41% Alc.
 Celery & Iron Cord. 12½% Alc.
 Celery King. O.K.
 Celery-Vesce. 0.4% Acetanilid.
 Centaur Lini. O.K.
 Certain Chill Tonic. 16% Alc.
 Corn Cure. 21% Alc. 37m. Can. Ind. 212 gr. Ether to oz.
 Gall Cure. O.K.
 Chamberlain's Cough Remedy. O.K.
 Diarrhoea Cure. 58% Alc. 18m. Chlorof. 6 gr. Opli. to oz.
 Immediate Relief. 69½ Alc.
 Pain Balm. O.K.
 Chandler's Eye Salve. ½ gr. Morph.
 Headache Buttons. 3½ gr. Acetanilid to dose.
 Lemon Cough Syr. 3% Alc. 2½m. Chlorof. to oz.
 Chapman's Liquid Pearl. 1% Alc.
 Chases Comp. Syr. Sarsa. 12% Alc.
 Dysp. Cure. 7% Alc. 1½m. Chlorof. 1-20 gr. Morph. to oz.
 Oint. O.K.
 Salve. O.K.
 Cherokee Indian Worm Expeller. O.K.
 Chewalla for Rheu. 54% Alc. 1-16 gr. Opli. to oz.
 Chinese Easy Corn Sheller. 5% Can. Ind.
 Green Drops. 70% Alc. 1½ to oz. Ether.
 Lini. 96% Alc. 1½ gr. Morph. to oz.
 Chloralia. 10% Alc. 91 gr. Chloral to oz.
 Chloro-Phenique. 6 gr. Chloral to oz.
 Chologestin. 17% Alc.
 Clmonia Cough & Asth. Cure. 30% Alc.
 Circus Lini. O.K.
 Clark's A. B. C. 25% Alc.
 Anti Billious Comp. 25% Alc.
 Life Balsam. 72% Alc. 1-16 gr. Morph. to oz.
 Classe's Big 3. 20% Alc.
 Cough Syr. 13% Alc. 3m. Opli. to oz.
 Classe's Penetrating Lini. 69% Alc. 10m. Opli. 38m. Chlorof. to oz.
 Clayton & Russell's Stomach Bitters. 36% Alc.
 Clement's Indian Blood & Liver Syr. 10% Alc.
 Magnetic Oil. 65% Alc. 1½ gr. Opli. 1½m. Ether. 1½m. Chlorof. to oz.
 Close's Catarrh Cure. O.K.
 Cloud's Invigorating Cord. 45% Alc.

Clum's Cath. 8% Alc.

Liver Cath. 38% Alc.

Clymol. O.K.

Coble's Dr. Neuralgia, Headache & Cold Cure. 85% Acetanilid.

Coe's Cough Balm. 10% Alc. 9-20 gr. Opil. to bottle.

Coe's Eczema Cure. O.K.

Coffeen's Lini. 98% Alc. 1 1-10 gr. Opil. to oz.

Coke's Dandruff Cure. 27% Alc. (Old).

Colden's Lebig Liq. Beef Tonic. 20% Alc.

Coltsfoote Expect. 1½% Alc.

Coleman's Asth. Cure. O.K.

Cole's Catarrh Cure. 4% Cocaine.

Colgate's Rum & Quinine. 73% Alc.

Colgate's Quinal Hair Tonic. 35% Alc. 7 gr. Chloral to oz.

Colic Remedy. 75% Alc. 12m. Fld. Ext. Can. Ind. to oz.

Collin's Fever Anti-periodic. 34% Alc.

Colman's Lily Lotion. O.K.

Colstead's Liver Po. O.K.

Comp. Blood Elix. 1% Alc.

Comp. Ext. Poke Root & Burdock. 18% Alc.

Ext. Sarsa. 8% Alc.

Fld. Ext. Buchu. 31% Alc.

Common Sense Carminative. 5% Alc.

Common Sense Cough Syr. 3% Alc. 1-30m. Chlorof. to oz.

• Lini. 60% Alc. 2½m. Chlorof. to oz.

Congress Bitters. 29% Alc.

Conjen's Comp. Honey & Tar. 2% Alc.

Constitution Water. 10% Alc.

Cornease. O.K.

Cornell's No-Aug-Nau Tabs. O.K.

Corwitz Stomach Bitters. 12% Alc.

Conzelman's Dr. J. Cough Syr. 3% Alc.

Covert's Burdock Bitters. 25% Alc.

Cox's Barb. Wire Lini. 7-20% Alc.

Cook's Filling. 70% Alc.

Cooper's Cough Remedy. 5% Alc.

New Discovery. 17% Alc.

Quick Relief. 30% Alc.

Universal Balm. 56% Alc.

Crackerjack Headache Po. 5 gr. Acetanilid to Po.

Crane's Agulne. 8 12-100 gr. acetanilid to oz.

Cold Tab. 1½ gr. Acetanilid. 1-54 gr. Morph. Sulph. to oz.

Cholera & Diarrhoea Remedy. 25% Alc. 2½ gr. Opil. 16m. Chlorof. to oz.

Cough Cure, 10% Alc. 1 37-100m. Chlorof. to oz.

Eczema Cure. O.K.

Family Lini. 8½m. Chlorof. 8½m. Ether, 3 42-100 gr. Chloral to oz.

Female Relief. O.K.

Headache Relief. 31% Alc. 11 gr. Acetanilid to oz.

I-Ro-No-La. 26% Alc.

- Kidney & Backache Cure. 10% Alc.
 Liver Po. O.K.
 Spring Medicine. 22% Alc.
 Cranitone. 20% Alc.
 Cranitonic Hair Food. 20% Alc.
 Cressler's Fragrant Balm. 20% Alc.
 Headache Capsules. 3 gr. Acetanilid to cap.
 Craft's Distemper Cure. O.K.
 Crosby's Vit. Phosphite. O.K.
 Croupoline. 36% Alc.
 Crook's Wine of Tar. 15% Alc.
 Crumpton's Strawberry Balsam. 50% Alc. 2½ gr. Opli. to oz.
 Cubeb Cough Syr. ½ gr. Chlorof. 1-32 gr. Morph. to dr.
 Cumin's Dr. Vegetine. 18% Alc.
 Curline Linl. 30% Alc. 5½ gr. Opli. to oz.
 Curline Cough Syr. O.K.
 Cushman's Menthol Balm. O.K.
 Cuticura Resolvent. 20% Alc.
 Dale's Head Ache Po. 4 gr. Acetanilid to po.
 Damshinsky Hair Dye. O.K.
 Danna's Sarsa. 20% Alc.
 Danderine. 10% Alc.
 Daniel's Colic Cure. 70% Alc.
 Fever Drops. 70% Alc.
 Pine Apple. 24% Alc.
 Wonder Worker Linl. O.K.
 Darby's Propolactl. O.K.
 Davis's Anti Headache Cure. 3½ gr. Acetanilid to po.
 Castor Oil. 1% Alc.
 Kidney Tabs. O.K.
 Tasteless Castor Oil. 1% Alc.
 Anti-Headache. 265 gr. to oz.
 Day's Ague Tonic. 25% Alc.
 D. D. D. Remedy. 40% Alc. 1.75 gr. Chloral to oz.
 Dead Shot on Pain. O.K.
 De Aucker's Celery and Pepsin Comp. 15% Alc.
 Debeo Aro. Castor Oil. 3% Alc.
 Diarrhoea Mix. 90% Alc. 40m. Chlorof. to oz.
 Cholera Mix. 85% Alc. 6 gr. Opli. to oz.
 Euralgia. 30% Alc. 16 gr. Acetanilid to oz.
 Hair Tonic. 10% Alc.
 Household Linl. 80% Alc. 4m. Chlorof. 16m. Ether to oz.
 Lax. Syr. Pepsin. 20% Alc.
 Remedy for Kidney Disease. 18% Alc.
 Solution Antiseptic. 25% Alc.
 Toilet Benzene. 95% Alc.
 Deem's Rhen. Remedy. 10% Alc.
 De Lacey's Clin-ko-na and Iron. 16% Alc.
 Hair Tonic. 5% Alc.
 Deloste's Head Ache Po. 195 gr. Acetphenetidine to oz.

Denarco. 29% Alc.

Denby's Constitution Water. 10% Alc.

Dentifrice. O.K.

Denton's Balsam. 2% Alc.

Derma-Royale. 2% Alc.

Dermicella. 1 gr. Opli. 1 gr. Cocaine to oz.

Dernier's Anti-Grippine. 2 gr. Acetanilid to Tab.

Detrich's Ferro-Mangan. 10% Alc.

Ferro-Peptide. 15% Alc.

Detchon's Health Renewer. 12.5% Alc.

Kidney Remedy. 15% Alc.

Nervine Tonic. 15% Alc.

New Treatment for Stomach. 15% Alc.

Rheu. Cure. (Old Mystic Cure). O.K.

Spavin Lini. O.K.

DeWitt's Bitters. 30% Alc.

Colic and Cholera Cure. 56% Alc. 12m. Ether. 6.5 gr. Opli. 30m.

Chlorof. to oz.

Colic Remedy. 40% Alc. 9m. Chlorof. 2.25 gr. Opli. 6.25m. Ether to oz.

Cream. 6% Alc.

Cough Syr. (One Minute Cough Cure). 2% Alc. 0.3 gr. Opli. 6m.

Ether to oz.

Sarsa. 14% Alc.

Witch Hazel Salve. O.K.

Diamond Black Oil. (Rattlesnake Oil). 0.33% Rattlesnake Oil.

Diapepsin. O.K.

Dickson's Blk. Berry Carminative. 20% Alc. 3-80 gr. Morph. to oz.

Digg's Fay-u-ba. 13.5% Alc.

Dill's Balm of Life. 70% Alc. 2.66 gr. Opli. to oz.

Diometto. 12.5% Alc.

Diurectic Elix. 20% Alc.

Divilburnia. 18% Alc.

Dodd's Dennis Pills. O.K.

Doodlebug Lini. 63 Alc. $\frac{1}{2}$ m. Chlorof. to fl. oz.

Drake's German Croup Remedy. 7% Alc. $\frac{1}{4}$ gr. Opli. to oz.

Palmetto Wine Comp. 15% Alc.

Plantation Bitters. 38% Alc.

Dromgoole's English Female Bitters. 18.5% Alc.

Duffy's Malt Whiskey. 44% Alc.

Dunlop's Bromo Nervolene. 2% Alc.

Cascara. 10% Alc.

King of Pain. 31% Alc. 1.5m. Chlorof. to oz.

Durang Rheu. Remedy. 25% Alc.

Durham-Aseptic Skin Lotion. 5% Alc.

Durno's Catarrh Snuff. O.K.

Dutton's Veg. Discovery. 30% Alc.

Eagle Eye Salve. 4-5 gr. Morph.

Bell's Vitalizing Blood Purif. 15% Alc.

- Eckman's Alterative.** 14% Alc.
Ecthol. 24% Alc.
Edward's E. B. Lax. Headache Tabs. 2 gr. Acetanilid to tab.
 W. Pine and Tar. 4m. Chlorof. to oz.
Egg Emul. C. L. O. 10% Alc.
Egyptian Lini. 86% Alc.
Eilert's Ext. Tar and W. Cherry. 15% Alc.
 Pepsin Tonic. 12% Alc.
Elba Home Remedy Bronchitis No. 26. .01 gr. Opil. to tab.
 Remedy No. 3 for Cold. 0.1 gr. Opil. to Tab.
 Remedy No. 17 for Cough. 1-60 gr. Morph.
 Remedy No. 16 for Cramps. 0.3 gr. Opil.
 Remedy No. 30 for the Eye. 1-12 gr. Beta Eucaine.
 Remedy No. 10 for Grippe and Colds. 2 gr. Acetanilid. 1-20 gr.
 Opil. to Tab.
 Remedy No. 5 for Headache. 4 gr. Acetanilid.
 Remedy No. 22 for Infants. 1-67 gr. Codeine.
 Remedy No. 4 for Liver. 1-20 gr. Morph.
 Remedy No. 24 for Leucorrhoea. $\frac{1}{4}$ gr. Opil.
 Remedy No. 19 for Neuralgia. 1-20 gr. Morph.
 Remedy No. 23 for Piles. 7.3 gr. Opil. to oz.
Elective Cough Cure. 1-5 gr. Codeine. 4m. Chlorof. to oz.
Electric Bitters. (Old) 18% Alc.
Ellx. Elecampane Comp. 12% Alc. Tinc. Opil. 12m. to oz.
 Iodo. Brom. Cal. Comp. 20% Alc.
 Kosine O.K.
 Lactopeptine and I. Q. & S. 19% Alc.
 Lactopeptine. 19% Alc.
 Of Life. 18% Alc.
Ely's Liquid Cream Balm. O.K.
Emerson's Healing Po. O.K.
English Female Bitters. 18.5% Alc.
 Spavin Lini. O.K.
ENK Prep. All O.K.
Epilleptine. 1-20 oz. Alc. to pt.
Eptozone. O.K.
Espey's Fragrant Cream. 10% Alc.
Ess. Pepsin (F. & F.) 18.5% Alc.
Ethyl Bitters. 32% Alc.
Eusoma. 63% Alc.
Ext. Malt. 1.6% Alc.
Ext. Sarsa. (Dr. Quinn). 15% Alc.
Eye Fix. O.K.
Fachustalk's Vermifuge. 4% Alc.
Faftalan Oint. O.K.
Fairchild's Diast. Ess. Pancreas. 18.5% Alc.
Father John's Medicine. O.K.
Febriling. O.K.
Febritone. 2% Alc.

- Fenner's Cough Honey. 5.5% Alc. 0.5 gr. Morph. to oz.
 Golden Relief. (Old). 75% Alc.
 Kidney Cure. 14% Alc.
 Pleasant Worm Syr. 20% Alc.
 St. Vitus Dance. 35% Alc.
 Sennatoria. 20% Alc.
 Soothing Syr. 5.5% Alc. 0.5 gr. Morph. to oz.
 Syr. 20% Alc.
 Ferger's Sel-Seltzer. 10 gr. Acetanilid to oz. (Old).
 Field's Worm. Po. O.K.
 Fig Lax. Syr. (Florida Lax. Syr. Co.) 5% Alc.
 (Hance Brown & Co.) 8% Alc.
 Fink's Magic Oil. 87% Alc.
 Fitch's Biliary Corrector. 30% Alc.
 Black Haw. 75% Alc.
 Heart Corrector. 74% Alc. 1 gr. Opil. to oz.
 Five Drops. O.K.
 Flag Salt Headache and Neuralgia. 320 gr. Acetanilid to oz.
 Fleming's Crudoform. 17m. Chlorof. 17m. Ether to oz.
 Lump Jaw Cure. 43m. Ether to oz.
 Flexine. 16% Alc.
 Florentine Hair Promoter. 3% Alc.
 Floroplexion. 45% Alc.
 Flower's Liver and Stomach Sanitive. 15% Alc.
 Floyd's Glyc. Pearl. 7% Alc.
 Cerefodius. 13% Alc.
 Foerg's Remedy. 37.5% Alc.
 Foley's Banner Salve. O.K.
 Colic Cure. 67% Alc. 5 gr. Opil. 6 gr. Chlorof. to oz.
 Cream. O.K.
 Family Pills. O.K.
 Honey and Tar 6% Alc.
 Kidney Cure. 5% Alc.
 Orino Lax. 7% Alc.
 Sarsa. 7% Alc.
 Forbe's Diastaste. 17% Alc.
 Forsha's Alterative Balm. 25% Alc.
 Foso Foam. 3% Alc.
 Tonic. 9% Alc.
 Fosteter's C. L. O. O.K.
 Frazier's Root Bitters. 17% Alc.
 Freligh's Remedy. O.K.
 Tonic. O.K.
 French's Blood Wine. 14% Alc.
 Frostolla. 17% Alc.
 Fruitola. O.K.
 Fulton's Renal Comp. 5% Alc.
 Fuss Rheu. O.K.
 Galangal Oil. 2 grs. Chloral. 2 gr. Chlorof. to oz.

Garfield Tea. O.K.

Syr. 6% Alc.

Geier's Silk Weed Remedy. 25% Alc.

Genuine Egyptian Balsam. O.K.

German Blemish Eradicator. O.K.

German Cough Balsam. O.K.

German Kidney & Liver Remedy. 45% Alc.

German Oil Lini. 8½m. Chlorof. 8½m. Ether. 3 42-100 gr. Chloral to oz.

Germania Celery Comp. 33% Alc.

Oil. 48% Alc. 1m. Chlorof. 1m. Opl. 3m. Ether to oz.

Germicide Catarrh Remedy. O.K.

Gessler's Headache Wafers. 5 gr. Acetanilid to wafer.

Geysott's Yellow Dock & Sarsa. Comp. 18% Alc.

Gibraltar Hair Tonic. 47% Alc.

Gilmore's Aro. Wine. 20% Alc.

Globe Pills. O.K.

Glover's Distemper Cure. 27% Alc.

Glover's Imperial Blood Purif. 11% Alc.

Imperial Mange Cure. O.K.

Glyceroll. 44% Alc.

Glycobenphen. 3-40% Alc.

Glyco-Thymoline. 4% Alc.

Gobb's Pills. O.K.

Godfrey's Cord. 6% Alc. 1½ gr. Morph. to oz.

Golden Blood Tabs. 1-10 gr. Opl. to tab.

Golden Cold Cure. O.K.

Cure for Women & Malaria Cure. O.K.

Dysp. Tonic. O.K.

Gonorrhea Cure. O.K.

Golden Kidney Cure. O.K.

Golden Leucorrhoea Cure. O.K.

Liver Pills. O.K.

Nerve Builder. O.K.

Oint. O.K.

Petals Women's Health Restorative. 7% Alc.

Rectal Cones, ¼ gr. Cocaine per cone.

Relief for Rheu. 50% Alc.

Worm Cure. O.K.

Gonbault's Caustic Balsam. O.K.

Gon. Cure. 50% Alc.

Gooch's Mexican Quick Relief. 63% Alc. 2½m. Opl. 2½m. Chlorof. to oz.

Mexican Syr. 3% Alc. 1-5 gr. Morph. to oz.

Sarsa. 15% Alc.

Gossom's Kidney & Bladder Cure. O.K.

Gottchalk's Cough Mix. 5% Alc. ¼ gr. Morph. 1-5 gr. Opl. to oz.

Eye Water. 2% Alc. ¼ gr. Morph. ¼ gr. Opl. to oz.

Neuralgia Cure. O.K.

Gowan's Pneumonia Cure, 3 gr. Opl. to oz.

- Graham's Catlico Hair Grower. 5% Alc.
 Dysp. Cure. 3% Alc.
 Face Bleach. 5% Alc.
 Grant's Pills. O.K.
 Grave's Heart Reg. 58% Alc. 25% Ether.
 Grays Glyc. Tonic. Comp. 11% Alc.
 Invaluable Oint. O.K.
 Pile Oint. O.K.
 Green's Ague Conqueror. 50% Alc.
 August Flower, 10% Alc.
 Green Mountain Asth. Cure. O.K.
 Greene's Nervura. 18% Alc.
 Grim's Eye Water. $\frac{1}{2}$ gr. Cocaine to oz.
 Grove's Baby Bowel Remedy. 7% Alc.
 Chill Tonic. O.K.
 Pepsin Coffee. O.K.
 Tasteless Worm Syr. O.K.
 Guardian Angel. O.K.
 Gude's Peptomangan. 16% Alc.
 Gun's Cough Remedy. 2 $\frac{1}{2}$ % Alc. 9m. Chlorof. to oz.
 Gwinn's Onion Syr. 6% Alc. 1-32 gr. Morph. $\frac{1}{2}$ m. Chlorof. to oz.
 Hadden's Uric Solvent. 25% Alc.
 Hagee's C. L. O. 8% Alc.
 Hair's Asth. Cure. 18% Alc.
 Hairine. 19.8% Alc.
 Hale's Honey and Horehound. 13% Alc. 6-13 gr. Opi. to oz.
 Hall's Balsam. 9% Alc.
 Catarrh Cure. 14% Alc.
 Family Pills. O.K.
 Great Discovery. 43% Alc.
 Hair Renewer. 15% Alc.
 Lung Balsam. 16% Alc.
 Halstead's Pepsin Fruit Syr. 5% Alc.
 Hamburg Drops. 55% Alc.
 Hamlin's Cough Balsam. 11% Alc.
 Wizard Oil. 70% Alc.
 Hancock's Liquid Sulphur. O.K.
 Hand's Colic Cure. 5% Alc.
 Cough and Croup Med. 6% Alc. 0.11 gr. Codeine. 1.2m. Ether to oz.
 Diarrhoea Mix. 9% Alc.
 General Tonic. 25% Alc.
 Pleasant Physic. 20% Alc.
 Teething Lotion. 20% Alc.
 Worm Elix. 10% Alc.
 Hanford's Balsam and Myrrh. 82% Alc.
 Hanson's Corn Salve. O.K.
 Happy Home Blood Purif. O.K.
 Harlan's Liver, Kidney and Rheu. O.K.
 Harlem Oil. O.K.
 Harper's Brane-Fude. 30% Alc. 16 gr. Acetanilid to oz.

- Hart's Honey and Horehound.** 4% Alc.
Harter's Bitters. 32% Alc.
 Fever and Ague Cure. 45% Alc.
 German Vermifuge. O.K.
 Iron Tonic. 23% Alc.
 Lini. 90% Alc.
 Lung Balm. 15% Alc.
 W. Cherry Bitters. 32% Alc.
Haskin's Nervine. 0.5% Alc.
Hawk Bitters. 20% Alc.
 Burdock Nerve Tonic. 7% Alc.
Hawkin's Specific. 22% Alc.
Hay's Hair Health. O.K.
Haywood's Asth. Cure. O.K.
 Camphor Cream. O.K.
 Kidney Remedy. O.K.
 Kidney Root. O.K.
 Pile Remedy. O.K.
 Tasteless Chill Tonic. 19% Alc.
Head's Red Clover. 6% Alc.
Headeze. 240 gr. Acetanilid to oz.
H. E. L. for Corns. 50m. Can. Ind. 20% Alc.
Hemapeptone. 11% Alc.
Henderson's Brownie Head Ache Cure. 3 gr. Acetanilid to Tab.
Hendrick's Sugar Coated Pills. O.K.
Henry's Tri-iodides. 20% Alc.
 Tri-chlorides. 20% Alc.
Herb Med. Worm Killer. O.K.
Herbert's Celery Phos. 3% Alc.
 C. L. O. 12% Alc.
 Cough Remedy. 11% Alc. 2.6m. Chlorof. to oz.
Herbine. 24% Alc.
 Cough Killer. 24.5% Alc.
Hermit Salve. O.K.
Herpicide. (Newbros.) 40% Alc.
Herrick German Lini. O.K.
Hess Healing Po. O.K.
H. H. H. Med. 65% Alc.
Hiatt's Germicide. O.K.
Hibbard's Rheu. Syr. 10% Alc.
Hick's Capudine Cure. 8% Alc.
Hill's Cascara Tabs. $\frac{1}{2}$ gr. Acetanilid to tab.
 Peerless Cough Syr. 12% Alc. 1-40 gr. Morph. to oz.
 Specific. 10% Alc. 1-6 gr. Opil. to oz.
 Worm Specific. 11% Alc.
Himalaya. 9% Alc.
Hind's Honey Almond Cream. 7% Alc.
Hinkley's Bone Lini. 87% Alc.
Hire's Root Beer. O.K.

- Hobb's Liver Pills. O.K.
 Sparagus Pills. O.K.
 Hobson's Almond Cream. O.K.
 Arnica Salve. O.K.
 Blackberry Balsam. 10% Alc.
 Camphor Ice. O.K.
 Carbolic Salve. O.K.
 Cholera Cure. 78% Alc. 4.3 gr. Opi. 36m. Chlorof. to oz.
 Comp. Ext. Buchu with Acet. Potash. 9% Alc.
 Comp. Quinine Hair Tonic. 3 gr. Chloral. 9% Alc. to oz.
 Dandruff Remedy. 4.3 gr. Chloral, 3.5% Alc. to oz.
 Ext. Sarsa. O.K.
 Eucamenthat Tooth Po. O.K.
 Hair Renewer. 3% Alc.
 Hair Restorer. 3% Alc.
 Head Ache Po. 189 gr. Acetanilid to oz.
 Headache Tabs. 278 gr. Acetanilid to oz.
 Horse Remedy. O.K.
 Lax. Cold Tabs. 164 gr. Acetanilid to oz.
 Lax. Fig Syr. 5% Alc.
 Painless Corn Killer. 30% Alc. 83m. Ether to oz.
 Pink Pain Pills. 278 gr. Acetanilid to oz.
 Tasteless Vermifuge. 13% Alc.
 Veg. Prescription. O.K.
 Whooping Cough. 4m. Chlorof. to oz.
 Hoff's Consumption Cure. 0.1 gr. Opi. to dose.
 German Lini. O.K.
 Malt Ext. 1.9% Alc.
 Hoffman's German Tea. O.K.
 Harmless Headache. 45% Alc.
 Red Drop. 57% Alc.
 Hollingsworth Alterant and Solvent. 12% Alc.
 Holmes' Fragrant Frostilla. 17% Alc.
 Homonis Remedy. 50% Alc. (For G. & G.)
 Hood's May Blossom and Honey. 12% Alc.
 Olive Oint. O.K.
 Sarsa. 18% Alc.
 Tussano. O.K.
 Hoofland's German Bitters. 2% Alc.
 Hoope's Dysp. Tabs. O.K.
 Hoosier Cough Syr. O.K.
 Curling Fluid. O.K.
 Hoover's Balsam and W. Cherry. 35% Alc. 1-120 gr. Morph. to dose
 Hop Bitters. 12.5% Alc.
 Horsford's Acid Phos. O.K.
 Hostetter Stomach Bitters. 39% Alc.
 Hot Springs Blood Remedy. 10% Alc.
 Howe's Lini. O.K.
 Blackberry Balsam. O.K.
 Hoxie's Croup Cure. 20% Alc.

- Hoyt Blood Cure. 25% Alc.
 Huffman Headache. 45% Acetanilid.
 Popular Injec. 0.5 gr. Morph. to oz.
 Hughes' Blood Purif. 7.5% Alc.
 Cherry Exp. 1-43 gr. Morph. 1-5m. Chlorof. to oz.
 Imp. Tonic for Chills & Fever. 5% Alc.
 Chill and Fever. 24% Alc.
 Chill Tonic. 5% Alc.
 Hulce's Blood Building Tonic. 5% Alc.
 Blood Remedy. 5% Alc.
 Beulah Cough Cure. 2% Alc.
 Imp. Bowel & Liver Reg. 5% Alc.
 Imp. Cough Cure. 3% Alc.
 Lini. 50% Alc.
 Oint. O.K.
 Pineapple Cord. 5% Alc.
 Hull's Balsam Tar Comp. 14% Alc.
 Cough Syr. 7m. Alc. 2-5m. Chlorof. 1-80 gr. Heroin. to dr.
 Superlative Comp. 15% Alc.
 Superlative Lini. 70% Alc.
 Hulling's Catarrh Jelly. O.K.
 Humphrey's Marvel of Healing. 15% Alc.
 Specific Pills No. 2. O.K.
 Witch Hazel. 15% Alc.
 Hunt's Remedy. 0.8% Alc.
 Hurley Sarsa. 20% Alc.
 Husband's Calcined Mag. O.K.
 Huckem. 7% Alc.
 Hutchinson's Anti-Apoplectine. 21% Alc.
 Hydrolin. 0.5% Alc.
 Hymora. O.K.
 Ideal Colic Cure. 1.25 gr. Opil. 80% Alc. 1 16-100m. Ether. 1.65 gr. Can. Ind.
 to oz.
 Ideal Lini. 6.66% Chlorof. 60% Alc. .013% Ether.
 Ikey Einstein Crabs. 50% Alc.
 Imperial Hair Prep. O.K.
 Improved Veg. Reg. 1% Alc.
 India Cholagogue. 19% Alc.
 Indian Ka-ton-ka. 20% Alc.
 Rattle Snake Oil. O.K.
 Ingram's BIF. 3% Alc. 1½ gr. Opil. to oz.
 Buchu Diuretic. 50% Alc.
 Celery Comp. 25% Alc.
 Ingram's Cough Syr. No. 5. 10% Alc. 1 1-9 gr. Morph. 2m. Chlorof. to oz.
 Dysp. Tabs. O.K.
 Ext. Sarsa. & Red Clover. 18% Alc.
 LaGrippe Tabs. 88% Acetanilid.
 Peerless Pile Panacea. 2½ gr. Opil. to oz.
 Injection Brou. 0.3% Alc. 3 gr. Opil. to oz.
 Iodex. O.K.

- Iodia. 38% Alc.
 Iowna. $\frac{1}{2}$ m. Tr. Can. Ind.
 Ireland's New Discovery. 10% Alc.
 Islands New Discovery. 10% Alc.
 Ivory Oil. O.K.
 Jack Frost. O.K.
 Jackson's Common Sense Lini. $\frac{1}{2}$ gr. Chloral. 49 gr. Acetanilid. $\frac{1}{2}$ gr. Morph. to oz.
 Jackson's Eye Salve. $\frac{1}{2}$ gr. Morph. to oz.
 James' Ext. Can. Ind. 8% Alc. 1-6 gr. Opil. 9-10 gr. Can. Ind. to oz.
 Soothing Syr. 1-20 gr. Heroin to oz.
 Wine of Hops. 23% Alc.
 Japanese Menthodine. O.K.
 Oil. 5% Alc.
 Pile Remedy. 9.11 gr. Opil. to oz.
 Jaynes' Alternative. 25% Alc.
 Balsam. 23% Alc. 9 gr. Opil. to oz.
 Expect. 13% Alc. 1.2 gr. Opil. to oz.
 Lini. 52% Alc.
 Tonic Vermifuge. 29% Alc.
 Sanative Pilla. 3.4 gr. Opil. to oz.
 Jim Crow Corn Salve. O.K.
 Johnson's Anodyne Lini. 18% Alc. 6 $\frac{1}{2}$ m. Ether. $\frac{1}{2}$ gr. Opil. to oz.
 Dysp. Cure. O.K.
 Indian Blood Syr. 15% Alc.
 Magnetic Oil. O.K.
 Sarsa. 16% Alc.
 6068. 18% Alc.
 Jones' Blush of Roses. O.K.
 Red Clover Tonic. 21% Alc.
 Jordan's Champion Lini. 68% Alc. 3m. Ether. 3m. Chlorof.
 Lung Renovator. 6 $\frac{1}{2}$ % Alc.
 Seven United Blood & Nerve Remedy. 21% Alc.
 Woman's Uterine Tonic. 21% Alc.
 Juniper Tar. 1 $\frac{1}{2}$ drams. Alc. to bottle.
 Kalamazoo Celery Comp. 9% Alc.
 Kargon Comp. 15% Alc.
 Katarono. 28% Alc.
 Katharmon. 15% Alc.
 Kauffman's Sulph. Bitters. 23% Alc.
 Kay's Lung Balm. (Liq.). 1% Alc. 1-10 gr. Opil. (Saratoga Springs, N. Y.)
 Kay's Dr. Lung Balm. (Liq.) 10% Alc. (Omaha, Neb.)
 Kay's Dr. Lung Balm. (Tab.) 1-45 gr. Morph. to tab. (Saratoga Springs, N. Y.)
 Lung Balm. (Tab.) O.K. (Omaha, Neb.)
 Pile Cure. 3-14 gr. Opil. to suppos. (Saratoga, N. Y.)
 Renovator. 25% Alc.
 Keemp's Root Beer. O.K.
 Keen's Eye Salve. 5 gr. Morph.
 Kelley's Liver Pilla. O.K.

- Kemp's Balsam.** 2 2-5m. Chlorof. to oz.
Kendall's Spavin Cure (Human). 44% Alc.
 Spavin Cure (Animal). 41% Alc. 9% Ether.
Kennedy's Favorite Remedy. 18% Alc.
 Headache Tabs. 2 2-5 gr. Acetanilid to tab.
 Horehound & Tar. 2% Alc.
 Lax. Honey & Tar. 2% Alc.
 Lax. Cough Syr. 2% Alc.
 Med. Discovery. 42% Alc.
 Oint. O.K.
 Rheu. Remedy. 86% Alc.
 Salt Rheum. O.K.
 Scattering Lini. O.K.
 Scrofula Oint. O.K.
Kentucky Cholera Cure. 65% Alc. 12m. Opli. to oz.
Kensington Hair Tonic. 3% Alc.
Kern's Rheu. Cure. 30% Alc.
Kerr's System Renovator. 20% Alc.
Keystone Syr. Hypophos. Comp. O.K.
Kickapoo Cough Syr. 20% Alc. 1-50 gr. Opli. to oz.
 Indian Oil. 60% Alc. 11-20 gr. Opli. 8m. Ether to oz.
 Sagwa. 16% Alc.
Kidder's Asth. Pastilles. O.K.
 Digestatin. O.K.
Kidd's Cough Syr. 1-20 gr. Morph. Sulph. 5% Alc. to oz.
Kilmer's Autumn Leaf. 86% Alc.
 Cough Cure. 10% Alc.
 Female Remedy. 9% Alc.
 Heart Remedy. 9% Alc.
 U. & O. Oint. O.K.
King of the Blood. 24% Alc.
King of Malaria. 8% Alc.
King's Blk. Berry Cord. 20% Alc. 1 gr. Opli. to oz.
King's New Discovery. 4% Alc. 3m. Chlorof. to oz.
 King of the Blood. O.K.
 Liver and Kidney Cure. 25% Alc.
 Pure Malt. 5% Alc.
 Red Clover & Burdock. 10% Alc.
Kinsman's Asth. Remedy. O.K.
Kirchner's Green Mount. Oil. O.K.
Kis-Ko. 3% Alc.
Kitchell's Lini. O.K.
 Wind Puff. O.K.
K. K. 1-7 gr. Morph. to oz.
Klande's Peruvian Wahoo. 25% Alc.
Klinck's Catarrh & Brou. O.K.
Kline's Nerve Restorer. O.K.
Knight's Stomach Remedy. 5-10% Alc.
Knorro Chinese Green Drops. 70% Alc. 1½m. Ether to oz.
Knoxit. O.K.

- Kocelko Vin. 21% Alc.
 Kodol Nerve Tonic. 18% Alc.
 Kodol Dysp. Cure. 12% Alc.
 Koenig's Hamburg Drops. 55% Alc.
 Little Herb Pills. O.K.
 Nerve Tonic. 5% Alc.
 Kohler's One Night Corn Cure. 4% Alc. 4½m. Can. Ind. 2½m. Chlorof. 2½ gr.
 Morph. to oz.
 Headache Po. 53-5 gr. Acetanilid.
 Kola Cardinette. 17½% Alc.
 Pepsin. 3 gr. Acetanilid.
 Kondon's Catarrh Jelly. O.K.
 Kopp's Baby Friend. 8% Alc. ½ gr. Morph. to oz.
 Cure-A-Koff. 4% Alc. 4 gr. Chlorof. 1 1-17 gr. Morph. to oz.
 Krause's Cold Tabs. 36 gr. Acetanilid to the box.
 Headache Tabs. 36 gr. Acetanilid to box.
 Kreotol. 16% Alc.
 Kuhn's Rheu. Remedy. 35% Alc.
 Kurem Pain Extractor. 72% Alc.
 Kuctnow's Powds. O.K.
 Lacleide's Nerve & Bone Lini. O.K.
 Lactopeptine Elix. 19% Alc.
 LaCreole Hair Restorer. 12% Alc.
 La-Cu-Pi-A. 15% Alc.
 LaFrance Comp. O.K.
 Lallemand's Gout & Rheu. Cure. O.K.
 Lanbach's Dr. Elect. Lini. 80% Alc.
 Lambert & Lowman's Almond Cream. 4% Alc.
 Alpine Cream. 4% Alc.
 Arnica Lini. 5% Alc. 1 gr. Opli. to oz.
 Asthmatic Elix. with Iodide Pot. 50% Alc.
 Antisepoid. 20% Alc.
 Balsam Pine & Spruce. 9% Alc. 3-16 gr. Morph. Acet. 4m. Chlorof.
 to oz.
 Beef Iron & Wine. 22% Alc.
 Blkberry Cord. 25% Alc. ½ gr. Opli. to oz.
 Blkberry & Ginger. 25% Alc. ½ gr. Opli. to oz.
 Boulangier Hair Dye. O.K.
 Bronchial Loz. O.K.
 Buchu with Pot. Acet. 25% Alc.
 Camphor Cream. 4% Alc.
 Cascara Sag. Constipation Remedy. 1% Alc.
 Castoria. 10% Alc.
 Chlor. Pot. Tabs. O.K.
 Colic, Cholera & Diarrhoea Remedy. 95% Alc. 1 gr. Opli. to oz.
 Comp. Ext. Buchu. 25% Alc.
 Comp. Ext. Celery. 20% Alc.
 Comp. Ext. Damiana. 25% Alc.
 Comp. Hive Syr. 10% Alc.
 Ext. Sarsa. 20% Alc.

Comp. Rheu. Mix. 28% Alc.
 Comp. Sarsa. Still. 20% Alc.
 Comp. Tabs. 1½ gr. Acetanilid.
 Comp. Tasteless Quinine Choc. O.K.
 Corn Eradicator. 40% Alc. 50% Ether to oz.
 Corsican Hair Restorer. 20% Alc.
 Curative Dissolvent with Iodide Pot. & Soda. 20% Alc.
 Dental Foam. 50% Alc.
 Emplas. Collodin Compos. O.K.
 Emul. C. L. O. 7% Alc.
 Ess. Bay Rum. 95% Alc.
 Ess. Jam. Ginger. 95% Alc.
 Ext. W. Hazel. 15% Alc.
 Ext. Wild Strawberry. 25% Alc. ¼ gr. Opii. to oz.
 Eye Salve. 3 gr. Morph. Sulph. to oz.
 Face. Hand & Toilet Jelly. 4% Alc.
 Face Po. O.K.
 Flg Syr. with Senna & Lax. 10% Alc.
 Genito Injec. Remedy. 4% Alc.
 German Tooth Ache Drops. 1 dr. Chlorof. 2 drs. tr. Opii. 60% Alc.
 to oz.
 (Godfrey's) Cord. 6% Alc. 1½ gr. Opii. to oz.
 Green Oil. O.K.
 Haematon. O.K.
 Herbal Comp. 20% Alc.
 Headache Powds. 2 gr. Acetanilid to po.
 Headche Tabs. 2 gr. Acetanilid to tab.
 Headache Wafers. 2 gr. Acetanilid to wafer.
 Invigorating Salts. O.K.
 Iron Tonic Bitters. 20% Alc.
 Kidney Cure. 20% Alc.
 (Koch's Dr.) Nervine. 20 Alc.
 Lax. Cascara Comp. Tabs. O.K.
 Lax. Cold Tabs. 1½ gr. Acetanilid to tab.
 Magnetic Bitters. 20% Alc.
 Malarna. 19% Alc.
 (Mandrake & Culver). Bitters. 20% Alc.
 Marsh Root. 20% Alc.
 Neuro Rheumo Lini. 20% Alc. 1 gr. Opii. to oz.
 Pain Vanquisher. 95% Alc. 1 gr. Opii. to oz.
 Pasteur's Anti Injec. 4% Alc.
 Perfection Hair Dye (Sol. No. 1). 50% Alc.
 Perfumed Amm. O. K.
 Pile Cones. ¾ gr. Opii. to cone.
 Pile Salve. 7.48 gr. Opii. to oz.
 Pink Headache Caps. 3½ gr. Acetanilid per caps.
 Pulmonic Cough Syr. 9% Alc. 3-16 gr. Morph. Acet. 4m. Chlorof.
 to oz.
 Hair Tonic. 50% Alc.
 Sage Head Tonic. 50% Alc.

- Santonine Worm. Syr. 10% Alc.
 (Scott's) Lini. 50% Alc. 1 gr. Opli. to oz.
 Soda Mint Tabs. O. K.
 Spavin Cure. 25% Alc.
 Sun Cholera Mix. 3m. Tinct. Opli. to tab.
 Syrp. Hypophos. Comp. O.K.
 Syrp. Tolu & Tar, & Wild Cherry. 10% Alc. 1 gr. Opli. to oz.
 Syrp. Trifolium Comp. 10% Alc.
 (Swift's) Comp. Ext. Celery. 20% Alc.
 Talcum Po. O.K.
 Tar, Honey, Horehound & W. Cherry. 10% Alc. 1 gr. Opli. to oz.
 Tasteless Syr. Quinidia. 20% Alc.
 Tooth Po. O.K.
 Tooth Soap. O.K.
 Veg. Worm. Po. O.K.
 Vinetta. 25% Alc.
 W. Pine Expect. 9% Alc. 3-16 gr. Morph. Acet. 4m. Chlorof. to oz.
 W. Pine Expect., with Tar, H. H. and W. Cherry. 9% Alc. 3-16 gr.
 Morph. Acet. 4m. Chlorof. to oz.
 W. Pine & Menthol. 9% Alc. 3-16 gr. Morph. Acet. 4m. Chlorof. to oz.
 W. Pine & Red Spruce Expect. 9% Alc., 3-16 gr. Morph. Acet. 4m.
 Chlorof. to oz.
 W. Pine & Tar. 9% Alc., 3-16 grs. Morph. Acet. 4m. Chlorof. to oz.
 Worm Confections. O.K.
 Worm Choc. O.K.
 Worm Po. O.K.
 Worm Syr. 10% Alc.
 Lith. Hydrangea. 25% Alc.
 Lameroux, Dr., Saw Palmetto & Sarsa. O.K.
 Lane's Blood Med. 21% Alc.
 Catarrh Med. 25% Alc.
 Lane's Cough Med. 9% Alc.
 Diarrhoea Med. 25% Alc. 2 1-5 grs. Opli., 16m. Chlorof. to oz.
 Hair Tonic. 3% Alc.
 Kidney & Backache Cure. 10% Alc.
 Pleasant Quinine Lax. 1½ grs. Acetanilid to tab.
 Sore Throat Med. 3% Alc.
 LaPearl's Circus Lini. O.K.
 Larena. 16% Alc.
 Lash's Kidney & Liver Bitters. 21% Alc.
 Lauback's Lini. 80% Alc.
 Lax. Cold Tabs. 2 grs. Acetanilid, 1-100 gr. Morph. to oz.
 Boro Pepsin. 2% Alc.
 Boro Quinine. 2 grs. Acetanilid to tab.
 Butter Cups. O.K.
 Quinine Tabs. 2 grs. Acetanilid to tab.
 Lax-Fos. 4% Alc.
 Laval's Celery Cord. 14% Alc.
 Chill Tonic. O.K.
 Sarsa. 22% Alc.

- Lavilla's, Dr., Pilules du, for Rheu. O.K.
 LaVoris. 5% Alc.
 LeBruns G. & G. Cure. O.K.
 Lemke's Cal., Herb. Pectoral. 5% Alc.
 Cal., Stomach Drops. 51% Alc. 18m. Ether, 5 grs. Opl. to oz.
 Sarsa., 15% Alc.
 Lemheo Elect., Lini. 62% Alc., 3m. Chlorof., 8m. Ether, 1 gr. Opl., to oz.
 Lemon's Lax. Syr. 8% Alc.
 Lentz Liver Pills. O.K.
 Leroux Blood. 14% Alc.
 Lichty's Celery & Nerve Comp. 17% Alc.
 Liebig's B., I. & W. 8% Alc.
 Life Plant. 15% Alc.
 Lightning Blood Elix. 20% Alc.
 Castoria. 12% Alc.
 Cough Drops. 3% Alc., 4m. Chlorof., to oz.
 Hot Drops. 60% Alc., 6m. Chlorof. to oz.
 K. & L. Cure. 19% Alc.
 Lax. Cough Syr. 3% Alc., 4m. Chlorof. to oz.
 Lax. Quinine Comp. Tabs. 1 gr. Acetanilid, 1 1-10 grs. Morph. Sulph.
 to tab
 Pain Killer. 60% Alc., 6m. Chlorof. to oz.
 Sarsa. 20% Alc.
 Worm Killer. 14% Alc.
 Lilly's Loz. O.K.
 Lindley's Golden Remedy. 2% Alc.
 Liquid Albolene. O.K.
 Franconia. O.K.
 Killem. O.K.
 Peptonoids. 18% Alc.
 Peptonoid with Creosote. 12% Alc.
 Liquocide (Liquozone). O.K.
 Liquozone Female Suppos. 10 grs. Chlorotone to oz.
 Oint. 8 3-5 grs. Chlorotone.
 Rectal Suppos. 7 7-24 gr. Opl. to oz.
 Listerine. 25% Alc.
 Littell's Liq. Sulphur. O.K.
 Liver Lax. O.K.
 Logan's, Loyd, Syr. Pine Comp. 5% Alc.
 Londin's Juniper Ade. O.K.
 Lone Star Lini. 90% Alc., 3 1/2m. Opl.
 Long's Blood Purif. 12% Alc.
 Longtry's, Walter, Scotch Oil. O.K.
 Loose's Red Clover. 20% Alc.
 Loring's Fat 10 U Food. O.K.
 Loxol Pain Expeller. 49% Alc.
 Low's Lini. 69% Alc.
 Lyon's Katharion. 76% Alc.
 Lax. Syr. 12% Alc.
 Periodical Drops. 54% Alc.
 Seven Wonder. O.K.

Ludley's Golden Remedy. 2% Alc.

Lux's Antisep. Sol. 21% Alc.

Arnica & W. Hazel Salve. O.K.

Barb Wire Lini. O.K.

B., I. & W. O.K.

Blkberry Cord. 14% Alc.

Borodine Eye Drops. 1-8 gr. Antipirine.

Charcoal Tabs. O.K.

Cherry Balm Cough. Syr. 3m. Chlorof., $\frac{1}{4}$ grs. Opl. to oz.

Children's Cough Syr. 8% Alc.

Digestain. 16% Alc.

Dyspepsia Tab. O.K.

Eczema Lotion. O.K.

Eczema Salve. O.K.

Foot Relief Po. O.K.

Gymnol Rubbing Oil. O.K.

Headache Tabs. 219 grs. Acetanilid to oz.

Hemotone (Liq.). 20% Alc.

Hemotone (Tab.). O.K.

Herb Tea. O.K.

Larkspur Lotion. 20% Alc.

Lax. Fig & Senna Syr. 9% Alc.

K. & L. Elix. 20% Alc.

Lax. Cold Tabs. O.K.

Liver Tab. O.K.

Membrane Catarrh Remedy. 20% Alc.

Nervedyne Elix. 15% Alc.

Neuralgia Tabs. 2 $\frac{1}{4}$ grs. Acetanilid to tab.

Pile Oint. 5% Ext. Bella.

Pile Suppos. $\frac{1}{4}$ gr. Acetanilid.

Rheu. Fluid. 17% Alc.

Rheu. Tabs. O.K.

Sallodion Corn Relief. O.K.

Sultana Hair Tonic. O.K.

Syr. Hypophos. O.K.

Tonall. 20% Alc.

Toothache Drops. O.K.

Women's Cord. O.K.

Worm Loz. O.K.

Lyter's Hot Drops. 38% Alc., 1.2m. Chlorof., 75m. Ether to oz.

Lytie's Pile Salve. 3 grs. Opl. to oz.

Madam Harris' Freckle Lotion. O.K.

Queen of Beauty. O.K.

Madison Oak Hall Phar. W. Pine Cough Syr. 4m. Chlorof., 3-16 gr. Morph.
Acet., 7% Alc. to oz.

Magic Cure For Rheu. 25% Alc.

Paste (Henderson). O.K.

Magnetic Lini. 69% Alc.

Oil. 65% Alc., 1.66 gr. Opl., 1.5m. Ether., 1.5m. Chlorof. to oz.

Magnolia Blossom. 0.5 gr. Opl. to oz.

- Maguire Benne. 48% Alc., 1-6 gr. Morph. to oz.
 Mahon's Spinal Remedy. 20% Alc.
 Malagan Pure Wine. 16% Alc.
 Malena Salve. O.K.
 Malt Cream (American). O.K.
 (South Bend). O.K.
 Malted Meat (American). O.K.
 Maltine with Cascara Sag. .0388% Alc.
 With Creosote. O.K.
 Maltine 18% Alc.
 Malt Nutrine. 1.9% Alc.
 Malt Marrow. 1.9% Alc.
 Maltzyme and Cascara Sag. 67% Alc.
 Maltzyme 7% Alc.
 Malydor. O.K.
 Manalin Lax. 8% Alc.
 Manola. 21% Alc. (Old).
 Maple Balsam. 12% Alc., 1-5m. Chlorof., 1-43 gr. Morph. to dr.
 Maple-lne. 20% Alc.
 Marchisis Uterine Catholicon. 1-40 gr. Opil., 18% Alc. to oz.
 Marmolee. O.K.
 Marshall's Catarrh Snuff. O.K.
 Lung Syr. 1.5 dr. Alc., 0.75 gr. Morph., 7m. Chlorof. to oz.
 Mason's Catarrh Remedy. O.K.
 Massman's Short Stop. O.K.
 May's Marshmallow Cream. O.K.
 McCullough French Liquid. 3% Alc.
 Pain Relief. 14% Alc.
 Rose Cream. 11% Alc.
 Toothache Stock. 80% Alc.
 Corn Cure. 80% Alc., 4 gr. Can. Ind. to oz.
 Cough Syr. 9% Alc., 1.5 gr. Opil. to oz.
 Hair Tonic. 1% Alc., 22 gr. Chloral to oz.
 Kidney and Liver. 14% Alc.
 Sarsa. 20% Alc.
 McDonald Vinegar Bitters. 3.1% Alc.
 McElree's Wine of Cardui. 20% Alc.
 McGull's Chill Cure. 15.3% Alc.
 McGee's Chill Tonic. 1% Alc.
 Emul. C. L. O. 0.6% Alc.
 McLain's Lini. O.K.
 Little Liver Pills. O.K.
 Blood Purif. 13% Alc.
 Iron Tonic. 11% Alc.
 Liver & Kidney Balm. 13% Alc.
 Rheu. Cure. 13% Alc.
 Sarsa. 13% Alc.
 Tar Wine. 11% Alc.
 Strengt. Cord. 25% Alc.
 Vermifuge. O.K.
 Volcanic Oil. O.K.

- McMunn's Elix. of Opil. 60% Alc., 0.8 gr. Morph. to oz.
 McQueen's Wa-Hoo B. and N. Tonic. O.K.
 Mederine. 12% Alc.
 Mellachol Painless Lax. 215m. Ethyl-acet. to oz.
 Mellin's Food. O.K.
 Melol. 3% Alc.
 Mendenhall's Cold & Grippe. 1.25 gr. Acetanilid.
 Corn Med. 23% Alc., 69% Ether., 48m. Can. Ind. to oz.
 Fever Tonic. 1.5% Alc.
 Pain Cure. 10% Alc., 3m. Chlorof., 125m. Opil.
 Pine Balsam. 12.5% Alc., 1-3 gr. Heroin to oz.
 Mennen's Corn Killer. 280m. Alc.
 Sure Corn Cure. 60% Alc., 1.5% Can. Ind.
 Menthocura. 35% Alc. (Old).
 Mentholated Cough Cure. O.K.
 Menthol Balm. O.K.
 Merchant's Gargling Oil. 42% Alc. (Beast).
 Gargling Oil. 44% Alc. (Man).
 Mercurio. O.K.
 Merrill's Female Tonic. 20% Alc.
 Penetrating Oil. O.K.
 Mieden's Liver Bitters. O.K.
 Migrimmes. 228 gr. Acetanilid to oz.
 Minard's Lini. O.K.
 Mintone. 25% Alc., 3 grs. Antipirine to oz.
 Miles' Anti-Pain Pills. 2 grs. Acetanilid to tab.
 Blood Purif. 12.8% Alc.
 New Cure. 11% Alc.
 Restorative Nervine. O.K.
 Restorative Tonic. 22% Alc.
 Milk's Emul. 1% Alc.
 Miller's Universal Balm. 62% Alc.
 Mishler's Herb Bitters. 33% Alc.
 M-I-S-T. O.K.
 Mixer's Camphor Syr. 7.5% Alc.
 Modene. O.K.
 Modoc Oil. 10m. Chlorof.
 Moeller's C. L. O. No. 1. O.K.
 Moffat's Teethina. 1-16 gr. Opil. to oz.
 Moffet Pills. O.K.
 Monarch Lini. O.K.
 Monnett's Kandolts. O.K.
 Moorhead's Russian Salve. O.K.
 Morley's Chill Syr. 8 gr. Acetanilid to oz.
 Wonderful 8. 60% Alc.
 Morrell's Kidney Cure. 18% Alc.
 Pain Destroyer. 55% Alc.
 Stomach Reg. 18% Alc.
 Morris English Colic Cure. 22% Alc., 3.5 gr. Morph. to oz.
 Morrow's Kld-ne-olds. O.K.

- Mother Grey's Sweet Worm Po. O.K.
 Headache Chocolates. 2.5 gr. Acetanilid to tab.
 Noble Healing Syr. 0.2% Alc.
 Blackberry Cord. 9.3% Alc.
 Segile Curative Syr. O.K.
 Friend. O.K.
 Tonic. 10% Alc.
 Myre's Solid Ext. Witchhazel Comp. O.K.
 Mullein's Balsam. Chlorof. 3m., Alc. 20m. to oz.
 Mull's Grape Tonic. 15% Alc.
 Munson's Croup & Cough Syr. 5% Alc.
 Munyon's Inhaler with Med. O.K.
 Pawpaw. 23% Alc.
 Witch Hazel Balsam. 18% Alc.
 Murine. O.K.
 Murry's Cyclone Lini. 72% Alc., 6m. Chlorof. to oz.
 Murray's Fish & Bone Salve. O.K.
 Mustang Lini., Mexican. O.K.
 National Corn Remover. O.K.
 K. & L. Cure. 15% Alc.
 Nature's K. and L. Cure. 10% Alc.
 Oil. O.K.
 Navin's Alterative Po. 3 dr. Nux Vom. to oz.
 Antiseptic. 3% Alc.
 Colic Cure. 15% Alc., 12m. Cann. Ind. to oz.
 Neat's Anti-pidsole. 63% Alc.
 Anti-septine. 20% Alc.
 Bronchiline. 1% Alc., 1m. Chlorof. to oz.
 Digestivans. 17% Alc.
 Elix. Alteris Comp. 22% Alc.
 Elix. Iron Pyrophos. Q. & S. 20% Alc.
 Elix. Rhubarb Comp. 10% Alc.
 Elix. Salicylic Acid. 30% Alc.
 Ess. Pepsin. 20% Alc.
 Ext. Sarsa. 20% Alc.
 Hoosier Balsam. 10% Alc.
 Nutrivine. 6% Alc.
 Nelson Baker Comp. Sarsa. Ext. 14% Alc.
 Neoferrum. 1.18% Alc.
 Nervan Tabs. for Blood. O.K.
 Neuralgine. 60% Alc.
 Tabs. 1.5 gr. Acetanilid to tab.
 Neurosine. 5% Alc., 0.6 gr. Can. Ind.
 Nichol's Comp. C. L. O. 16% Alc.
 Elix. Peruvian Bark. 8% Alc.
 Peruvian Bark. 18% Alc.
 Nile's Pile Oint. O.K.
 Nottol. O.K.
 Neutrolactic. 5% Alc.
 Nuxol. Vis-A-Tergo. 18% Alc.

Nyal's Baby Cough Cure. O.K.

Blackberry Carminative. 16% Alc., 1-8 gr. Morph. to oz.

Catarrh Remedy. 7% Alc.

Chill Cure. 10% Alc.

Eczemia Lotion. 32% Alc.

Eye Water. 9% Alc., 1 gr. Morph. to oz.

Hair Restorer. 0.3% Alc.

Hair Tonic. 0.3% Alc.

Hot Springs Blood Remedy. 10% Alc.

Lax. Fig Syr. 16% Alc.

Lini. 29m. Ether.

Pile. $\frac{1}{4}$ gr. Morph. to oz.

Rheu. Remedy. 10% Alc.

Stone Root. 18% Alc.

Soothing Syr. 1% Alc., 10m. Opli. to oz.

Sore Throat Cure. 10% Alc.

Veg. Pres. 16% Alc.

Worm Syr. 2% Alc.

Nye's Dermatine. O.K.

Nyle's Celery Comp. 18% Alc.

Iron Tonic. 20% Alc.

Old Scotch Rheu. 10% Alc.

Olive Branch. O.K.

Omega Oil. 10% Chlorof.

One Night Cough Cure (DeWitte's). 4% Alc., 2.2m. Chlorof., 4.5m. Can.
Ind., 1-7 gr. Morph. to oz.

Ongaline. 20% Alc.

Oil of Life. 67% Alc., 10m. Ether to oz.

Okay Specific. 27% Alc.

Orangeine. 48% Acetanilid.

Orange Blossom. O.K.

Orino Lax. Fruit Syr. 7% Alc.

Original Nerve and Bone Lin. O.K.

Orino. O.K.

Osborne & Colwell Almond Cream. 1.4% Alc.

Antisep. Pile Cure. O.K.

Aseptine Complex. Cream. O.K.

Caustic Balm. 3.6% Alc.

Camphor Ice. O.K.

Catarrh Balm. O.K.

Caustic Balsam. 3.6% Alc.

C. L. O. 4.4% Alc.

Cucumber Cream. O.K.

Cucumber Milk. 4.3% Alc.

Cura Denta. 31.6% Alc.

Dentrice Tooth Wash. 6.2% Alc.

Dyspept. Tabs. O.K.

Egg Shampoo. 27.6% Alc.

Egyptian Oil. 86% Alc.

Elect. Lini. 94% Alc., 1.87m. Chlorof. to oz.

Fig Syr. 25.5% Alc.
 Golden Oint. O.K.
 Hair Tonic. 20.2% Alc.
 Headache Po. 218 gr. Acetanilid to oz.
 Typocod Wine. 19.8% Alc.
 Iron Tonic Bitters. 14% Alc.
 K. & L. 4.7% Alc.
 Lax. Fig. Syr. 21.4% Alc.
 Little Liver Pills. O.K.
 Magnetic Hair Restorer. 17.4% Alc.
 Mentholated Throat Tabs. O.K.
 Orange Flower Bust Food. O.K.
 Oxozone. O.K.
 Pepsin & Bis. Tabs. 2.2m. Chlorof.
 Peruvian Tonic. 16.4% Alc.
 Phenamid. 3 gr. Acetanilid to tab.
 Pure Hair Oil. O.K.
 Red Clover Syr. 8% Alc.
 Rheu. Cure. 9.5% Alc.
 Sarsa. 8.1% Alc.
 Soda Mint Tabs. O.K.
 Stone Roof. 11.8% Alc.
 W. Pine Comp. 6% Alc.
 Veg. Worm Syr. 17.5% Alc.
 W. Pine Cough. 5.9% Alc., 2.2m. Chlorof. to oz.
 W. Cherry & Horehound Cough Syr. 5.9% Alc.
 Wood Violet Meal. O.K.
 Osgood's India Cholagogue. 18.8% Alc.
 Otto's German Remedy. 0.1 gr. Morph., 3m. Chlorof., 1% Alc. to oz.
 Cure. 1% Alc., 0.1 gr. Morph., 3m. Chlorof. to oz.
 Salve. O.K.
 Spruce Gum Balsam. O.K.
 Our True Tonic Herb Remedy. 25% Alc.
 Ovoiderrin. O.K.
 Owen's Pink Mix. O.K.
 Pink Elix. 11% Alc.
 Oxidine Chill Tonic. 5% Alc.
 Ox-O-La. 15% Alc.
 Oxydene. 5% Alc.
 Oxygenator Treatment. O.K.
 Ozojell. 4.4 gr. Chlorotone.
 Oxomulsion. 1.5% Alc.
 Pabst's O.K. Spec. 27% Alc.
 Page's Asthmatic Cigts. O.K.
 Climax Salve. O.K.
 Comp. Syr. Hypophos. O.K.
 Nerve & Lung Food. 10% Alc.
 Sarsa. 10% Alc.
 Pain-ine. 15.8% Alc.
 Pain Killer. 55% Alc., 2 gr. Gum Opil. to oz.

- Pain's Celery Comp. O.K.
 Palmer's Blood Success. O.K.
 Lotion. 80% Alc.
 Skin Success Oint. O. K.
 Palmo Tabs. O.K.
 Panopeptine. 19.7% Alc.
 Panzinoïd. O.K.
 Pape's Diapepsin. O.K.
 Papillon Skin Food. O.K.
 Papine. 11% Alc. 1 gr. Morph. to oz.
 Paracamph. O.K.
 Paralax. O.K.
 Pardee's Rheu. Remedy. 18% Alc.
 Parisian Sage. 12% Alc.
 Parker's Ginger Tonic. 50% Alc.
 Hair Balsam. O.K.
 Pascola Liquid. O.K.
 Pasteurine. 20% Alc.
 Paxtine. O.K.
 Paxton's Malt Ext. 5% Alc.
 Payne's New Discovery. 18% Alc.
 Peckham's Croup Remedy. O.K.
 Penn's Catarrh Cure. O.K.
 Lini. 94% Alc.
 Rheu. Cure. 25m. Alc.
 People's Castoria. 6% Alc.
 Healing Lini. 2.5% Chlorof.
 Pepsin Malt & W. Cherry Tonic. 25% Alc.
 Peytonzyme. 16% Alc.
 Peptonold with Iron & Wine. 16.5% Alc.
 Peptorene. O.K.
 Peptozine Tabs. O.K.
 Peroxidant. 10% Alc.
 Perrigoe's Blk. Berry Root. 22% Alc., $\frac{1}{2}$ gr. Opli. to oz.
 Cough Syr. 2% Alc., $\frac{1}{2}$ gr. Opli., 3m. Chlorof. to oz.
 Magic Relief. 95% Alc.
 Sarsa. 19% Alc.
 Worm Syr. O.K.
 Perry Davis Pain Killer. 55% Alc., 2 gr. Opli. to oz.
 Perry's Magic Rheu. Cure. 25% Alc.
 Peruna. 18% Alc.
 Peru Tonic. 16.26% Alc.
 Peruvian Tonic. 16.26 Alc.
 Peter's Peptic Ess. 7% Alc.
 Petroleum Balm. O.K.
 Pettis Pile Remedy. O.K.
 Pettits Amer. Cough Syr. 9.9% Alc., 30-143 gr. Morph. to oz.
 Eye Salve. 0.4 gr. Morph., 0.1 gr. Acetanilid to oz.
 Eye Water. 0.04 Morph., 0.4 gr. Acetanilid to oz.
 Pile Remedy. 0.4 gr. Morph. to oz.
 Worm Syr. 20.8% Alc.

- Phelp's Cough Syr. 3% Alc., 1.5m. Chlorof. to oz.
 Rheu. Elix. 32% Alc.
 Rheu. Syr. 32% Alc.
 Pheno-Coffene. 2 gr. Acetanilid to pill.
 Phenol Sodique. O.K.
 Phenny-O-Caffeine. 2 gr. Acetanilid to pill.
 Phillip's C. L. O. Emul. O.K.
 Phosphagon. 16% Alc.
 Phytoline. 23.5% Alc.
 Pleiffers Baby Cough Syr. 2% Alc.
 Positive Painless Pile Comb. 3.6 gr. powd. Opli. to oz.
 Ponca Comp. Uterine Alt. Tabs. O.K.
 Ponds Ext. 16% Alc.
 Poor Man's Bitters. 12% Alc.
 Popham's Asth. Spec. O.K.
 Porter's Antisep. Healing Oil. O.K.
 Pain King. 65% Alc. 30m. Ether to oz.
 Porto Vin. 21.1% Alc.
 Power's Asthma. O.K.
 Tonic. 20% Alc.
 Planter Cuban Oil. 4m. Chlorof. to oz.
 Planter's Female Remedy. 10% Alc.
 Liver & Kidney Reg. O.K.
 Platoroids. O.K.
 Platt's Chloride. O.K.
 Pierce's Favorite Pres. O.K.
 Lotion Tabs. O.K.
 Smart Weed. 40% Alc., 0.8 gr. Opli. to oz.
 Suppos. O.K.
 Pile Driver Salve. 1% Alc.
 Pinaud Eau De Quinine. 68% Alc.
 Pinex. 17% Alc., 22m. Chlorof., 7-8 gr. Heroin to oz.
 Pinkham's Blood Purif. 18% Alc.
 Veg. Comp. 18% Alc.
 Wash. O.K.
 Pink's Magic Oil. 87% Alc.
 Pinn's. O.K.
 Piso's Cure. $\frac{1}{2}$ gr. Can. Ind. to oz.
 Remedy Catarrh. O.K.
 Pitcher's Castoria. 10% Alc.
 Worm Syr. 13% Alc.
 Pres. 49. O.K.
 Pretzinger's Catarrh Balm. O.K.
 Price's Kola & Tar. 10m. Alc.
 Prima Purificans. 40% Alc.
 Primley's Celery & Cola. 17% Alc.
 Iron and Wahoo Tonic. 22% Alc.
 Sarsa. 18% Alc.
 Speedy Cure. 1m. Chlorof., 0.2 gr. Morph. to oz.
 Prosene. O.K.

- Protozone. 5% Alc.
 Conc., 20% Alc.
 Psychine. 10% Alc.
 Pusheck's Cold-Push. O.K.
 Eye Balm. 5% Alc.
 Push-Kuro. 15% Alc.
 Teething Relief. O.K.
 Tocenta Lini. 80% Alc., 40m. Ether to oz.
 Pyramid Pile Cure. O.K.
 Pyrozone. 1-10 gr. Acetanilid.
 Quaker Herb Ext. 18% Alc.
 Oil of Balm. 42% Alc.
 Quakerine. O.K.
 Quick's Antisep. 90% Alc., 2 grs. Opil. to oz.
 Chill Tonic. 15% Alc.
 Cough Med. 12% Alc., 1-6 gr. Heroin. to oz.
 R. & R. Blkberry Root Balsam, 30% Alc., 7-20 gr. Opil. to oz.
 R. & R. Lini. 5% Alc., 111-20 gr. Opil. to oz.
 Radcliff's Seven Seals. 65% Alc., 1.6 grs. Opil., 12 grs. Chlorof., 6 grs.
 Ether to oz.
 Radway's Female Reg. 25% Alc.
 Ready Relief. 27% Alc.
 Renovating Res. 16% Alc., 2-3 gr. Morph. to oz.
 Raman's Chill Tonic. O.K.
 Santonine Worm Syr. 8% Alc.
 Sarsa. 20% Alc.
 Ranney's Magic Oil. 79% Alc., 1½m. Opil. to oz.
 Ransom's Hive Syr. O.K.
 King of the Blood. O.K.
 Rawgum Rut Lini. 2% Alc.
 Ray's, Dr., Palmetto Comp. 11% Alc.
 Yellow Parilla Comp. 15% Alc.
 Raymond's Cough Syr. 2% Alc., 1-19 gr. Heroin. to oz.
 Genuine Bone Oil. 4m. Chlorof.
 Relief. 29% Alc.
 Tonic & Regulator. O.K.
 Reco Rheu. Remedy. 12% Alc.
 Rectol Pile Remedy. O.K.
 Red Cross Catarrh Cure. O.K.
 Re-Go Tonic Lax. Syr. 5% Alc.
 Renick's Pepsin Blood Tonic. 22% Alc.
 Renne's Pain Killing Magic Oil. 17% Alc.
 Restorine Comp. 35% Alc.
 Rex's Anti Pain Pills. 3½ grs. Acetanilid to pill.
 Rex for the Blood. 16% Alc.
 Kidney Bitters. 22% Alc.
 Kidney and Liver Bitters. 22% Alc.
 Original Headache Po. 5 grs. Acetanilid, ¼ gr. Caffeine, 1-48 gr.
 Heroin.
 Rex Toe Ease. 40% Alc., 10% Can. Ind.

- Rexall's A. B. C. Seutzer. 22 grs. Acetanilid.
 B. W. & I. 24% Alc.
 Blkberry Cord. 30% Alc.
 Celery & Iron Tonic. 25% Alc.
 Cherry Juice Cough Syr. 2-9 gr. Codeine to oz.
 Colic Cure. 0.5% Alc., 1m. Chlorof.
 Corn Solvent. 3% Alc., 7½ grs. Can. Ind.
 Diarrhoea Comp. 12% Alc., ½ gr. Opil. to oz.
 93 Hair Tonic. 25% Alc.
 Headache Pills, 165 Acetphenetidin to oz.
 Heart Cure. 25% Alc.
 Internal Pile Cure. 11% Alc.
 Jam. Ginger. 63% Alc.
 Kidney Cure. 15% Alc.
 Lesperance. 25% Alc.
 Mother Krohn's Cough Syr. 3% Alc.
 Muca Tone. 22% Alc.
 Quick Relief. 80% Alc.
 Rheum. Cure. 18% Alc.
 Rubbing Oil. 18m. Chlorof.
 Toothache Drops. 42% Alc.
 W. Pine & Tar. 14% Alc.
 Rheumagone. 2-15m. Ethyl Acet.
 Rheumatic Bullets. 1-16 gr. Morph. to oz.
 Cure. 20% Alc.
 Rheumatine Goutiline. 17% Alc.
 Rheuma-Vita. O.K.
 Rhineharts Cough Balsam. 10% Alc.
 Rialto. O.K.
 Richmonds Celebrated Nervine. 1-20% Alc.
 Epileptine. 3% Alc.
 Female Reg. Pills. O.K.
 King of the Nerves. 1% Alc.
 Liver Pills. O.K.
 New Lung Balsam. .68 gr. Can. Ind., 7.2m. Chlorof. to oz.
 New Radical Regen. 1% Alc.
 Rheu. Lightning. 40% Alc., 24m. Chlorof. per oz.
 Sexual Pills. O.K.
 Riggs' Diphtheria Spec. O.K.
 Ring's Ambrosia. O.K.
 Ripans. O.K.
 Robinaire Hair Dye. O.K.
 Robbin's Antisep. Comp. 7% Alc., 9 grs. Chloral to oz.
 Blkberry Balsam. 22% Alc., 1-6 gr. Morph. to oz.
 Robinson's Antigermol. 20% Alc.
 B. W. & I. 12% Alc.
 Cascara Sag. 48% Alc.
 Comp., Syr., Album. Iron. 2% Alc.
 Ellix. Anti-Constipa. 23% Alc.
 Ellix. Buchu, Juniper & Acet. Pot. 29% Alc.

- Elix. Cali. Bark. 20% Alc.
 Elix. Digitalin Comp. 19% Alc.
 Elix. of Gentian with Chlor. of Iron. 21% Alc.
 Elix. Lac. Pepsin. 12% Alc.
 Elix. Pepsin & Bis. 12% Alc.
 Elix. Paraldehyde. 47% Alc.
 Elix. Pepsin. 14% Alc.
 Elix. of I. Q. S. 28% Alc.
 Elix. Salicylic Acid. 35% Alc.
 Elix. Saloform Comp. 20% Alc.
 Elix. Saw Palmetto & Sandal Comp. 37% Alc.
 Elix. Valerianate Amm. 20% Alc.
 Elix. Vib. Comp. 45% Alc.
 Heroin Cord. with Terpin Hyd. 46% Alc.
 Hypophos. O.K.
 Lime Juice & Pepsin. 12% Alc.
 Peptonized Iron & Mangan. 16% Alc.
 Phosphoric Elix. 8% Alc.
 Restor-Vin. 20% Alc.
 Sol. of Albuminate of Iron. 13% Alc.
 Syr. Cinchona Alkaloids. 9% Alc.
 Syr. Hypophos. with W. Cherry Bark. 9% Alc.
 Syr. Tripol. 6% Alc.
 Syr. W. Pine Comp. 6% Alc., 4m. Chlorof., 3-16 grs. Morph. Sulph.
 W. Rose, W. Hazel Jelly. 5% Alc.
 Wine of Coca. 24% Alc., $\frac{1}{4}$ gr. Codeine to oz.
 Rocky Mountain Tea. O.K.
 Rodgers Headache. 4 grs. Acetanilid to dose.
 Liver Wort & Tar. 4% Alc.
 Roher's Oregon Cure. 20% Alc.
 Romary Oil. O.K.
 Romoc. O.K.
 Root-Herba Blood Purif. 7% Alc.
 Root-Tea-Na. O.K.
 Rosewood's Dandruff Cure. 1% Alc.
 Rosha's Hair Vim. 28% Alc.
 Royal Cough Cure. 2% Alc., 1-17 gr. Opil. to oz.
 Rubifoam. 45% Alc.
 Ru-Vin-Ade. 50% Alc., 3 grs. Opil. to oz.
 Ru-Mex. O.K.
 Rundell's Rheu. Cure. 16% Alc.
 Russell's Emuls. O.K.
 Sabine's Cough Balsam. 1-16 gr. Morph., 4m. Chlorof. to oz.
 World's Relief No. 1. O.K.
 World's Relief No. 2. Alc. 40%, 1.5 gr. Opil., 6m. Ether to oz.
 Saccarate. 15% Alc.
 Shckett's Common Sense Pills. O.K.
 Sage's Catarrh Cure. O.K.
 Sagine for Catarrh. 10% Alc.
 Skin and Scalp. 3% Alc.
 Wolfram (Antisep.). 3% Alc.

Sal-Lac. O.K.

Salter's Pain Subduer. 35% Alc., 1-5 gr. Opl., 47m. Chlorof. to oz.

Salva Cea. $\frac{1}{2}$ % Chlorof.

Salvation Oil. 2% Alc.

Samaritan Nerveine. O.K.

Sanborn Rocky Mount Lini. 85% Alc.

Sanford's Jam. Ginger. 67% Alc.

Liver Reg. & Inv. 16% Alc.

Radical Cure for Catarrh. 10% Alc.

Sanmetto. 18.6% Alc.

Sanol. 16% Alc.

L. & K. Cure. 16% Alc.

Santa-Abie Lung Rest. 2% Alc., 3.2m. Chlorof., 1-5 gr. Morph. to oz.

Santol. 68% Alc.

Santal Midy. O.K.

Sawyer's Arnica and W. Hazel Salve. O.K.

Family Cure. 15.6% Alc.

Ko-Ro-No. O.K.

Little Wide Awake Pills. O.K.

Squaw Root. O.K.

Schencke's Sea Weed. 19% Alc.

Pulmonic Syr. O.K.

Tonic. 19% Alc.

Schiffier's Colorine No. 2. 12.4% Alc.

Schliffman's Asth. Cure. O.K.

Schoen-Feld Diarrhoea. 50% Alc., 3 gr. Opl. to oz.

Scott's Emul. O.K.

Scovill's Blood and Liver Syr. 18.5% Alc.

Seabury's Gum Wash. 25% Alc.

Sear's Jam. Rheu. Cure. 8% Alc.

Seigel's Syr. O.K.

Seller's Cough Syr. 1-50 gr. Chlorof., 1-30 gr. Opl. to dr.

Seneca Oil. 3% Alc., 2m. Chlorof. to oz.

Seng. 18% Alc.

Sengine. 6% Alc.

Sennewauid Pres. 7% Alc.

Septola Antisep. Inhaler. 50% Alc.

Seven Barks. 7.5% Alc.

Seven Seals. 65% Alc.

Seven Sutherland Sisters Hair Grower. 30% Alc.

Sever's Eczema. 0.8% Alc.

Skin Cure. 1% Alc.

S. H. A. C. Headache Po. 4 gr. Acetanilid to Po.

Shaker Digest. Cord. .045% Alc.

Shamrock Oil. 93% Alc., 2-3 gr. Opl., 7m. Ether, 9m. Chlorof. to oz.

Sharpe & Dohme's Tonic Beef. 20% Alc.

Shedd's Cough Cure. 12% Alc., 1-6 gr. Opl. to oz.

Sherman's Prickly Ash Bitters. 22% Alc.

Shenk's Tonic. 19% Alc.

Sherman's Head Ache Cap. 2 gr. Acetanilid to cap.

- Shiloh's Catarrh Cure. O.K.
 Consump. Cure. 2% Alc., 1-5 gr. Morph., 2.5 gr. Chlorof. to oz.
 Vitalizer. O.K.
- Shinkle's Dysp. O.K.
- Shoop's Catarrh Cure. O.K.
 Cough Cure. 2% Alc.
 Croup Cure. 2% Alc.
 Diphth. Cure. 2% Alc.
 Head Ache Tabs. $\frac{1}{2}$ gr. Caffein, 2 gr. Acet. phenetidine. to tab.
 Liquid Renovative Remedy. 15% Alc.
 Night Cure. O.K.
 Panacea. 17.5% Alc.
 Preventics. O.K.
 Restorative. 12% Alc.
 Rheu. Remedy. 15% Alc.
 Rheu. Tabs. O.K.
 Worm Cure. 10% Alc.
- Shuller's Malligan Wine. 16% Alc.
- S. I. F. T. 16% Alc.
- Silver Pine Healing Oil. O.K.
- Simmon's Liver Reg. 18% Alc. (Old).
- Simpson's Veg. Comp. 11% Alc.
- Sloan's Chill-Fever-Distemper. 25% Alc.
 Lini. 25% Alc.
 Oint. O.K.
- Smith's Bile Beans. O.K.
 Kidney Remedy. 10% Alc.
 Nerve Restorer. 10% Alc.
 Pot. Comp. O.K.
 Tonic Syr. 1.9% Alc.
 Uric-O. 8% Alc.
 Wonder Worker. 27% Alc.
- Snow Lini. O.K.
- Soper's Cough Cure. 42m. Alc., 0.35 gr. Opl. to oz.
- S. Amer. Kidney Cure. 15% Alc.
 Tonic. 15% Alc.
- Southern Chill Cure. 25% Alc.
- Spasmoline. 7% Alc., $\frac{1}{2}$ gr. Opl. to oz.
- Squibb's C. L. O. O.K.
- St. Jacob's Oil. 10% Alc., 10% Ether.
- St. Patrick Pills. O.K.
- Stafford's Olive Tar. O.K.
- Stark's Head Ache Po. 7 gr. Acetanilid.
- Steketee's Neural. Drops. 50% Alc., 0.24 gr. Opl. to oz.
 Periodical Prep. 33% Alc.
- Stern's Kola Vina. 20% Alc.
 Shac Head Ache Cure. 4 gr. Acetanilid.
 Wine. 20% Alc.
- Steven's Eye Salve. 1.94 gr. Morph. to oz.

- Stewart's Healing Po. O.K.
 Hoof Oil. O.K.
 Stone's C. O. L. O.K.
 Root K. & L. Ellx. 11.8% Alc.
 Strong's Pectoral Stomach Pills. O.K.
 Stuart's Carbolic Troches. 1-10 gr. Opli.
 Worm Tabs. O.K.
 Sulpho Litha. O.K.
 Sulphogen. 25% Alc., 10 gr. Chloral to oz.
 Sulphume. O.K.
 Sun Cholera Cure. 3m. Alc., 3m. Tr. Opli. to oz.
 Superior Condition Po. O.K.
 Sure Pop Head Ache Po. 4 gr. Acetanilid to po.
 Sutherland's Eye Salve. 0.8 gr. Morph. to oz.
 Sutton's Unique Lini. 11% Alc.
 Swain's Ton-Ka-Way. 16% Alc.
 Ton-Ka-Way Oil. 63% Alc., 2.5m. Chlorof. to oz.
 Swamp Root. 9% Alc.
 Swan's L. & K. Cure. 5% Alc.
 Swayne's Oint. O.K.
 Swift's Specific. 16% Alc.
 Swissco Hair & Scalp Remedy. 40% Alc.
 Syke's Catarrh Cure. 2.5% Alc.
 Syr. of W. Pine Comp. 0.6% Alc., 0.23 gr. Morph., 2.8m. Chlorof. to oz.
 Syr. Tar with W. Cherry & Horehound. 6% Alc.
 Tabler's Oint. O.K.
 Taraxline. 20% Alc.
 Tar-Lu. 5% Alc., $\frac{1}{4}$ gr. Codeine Sulph. to oz.
 Tarrent's Seltzer Aperient. O.K.
 Tartarlithine. O.K.
 Taylor's Cherokee Rem. 15% Alc., 1-3 gr. Morph. to oz.
 Sweet Gum & Mullen. 15% Alc., 1-3 gr. Morph. to oz.
 Teagues Med. Air. 90% Alc., $3\frac{1}{4}$ m. Chlorof. to oz.
 Te-Ko Lini. O.K.
 Telephone Lini. O.K.
 Terraline. O.K.
 Texas Wonder. 43% Alc.
 Thatcher's Amber Injec. 3% Alc., 1-3 grs. Opli. to oz.
 Cough Syr. 12% Alc.
 Cholera Mixt. 12% Alc., 14.25 gr. Morph. to oz.
 Imp. Liver Pills. O.K.
 Instant Relief Lini. O.K.
 Liver Po. O.K.
 Liver & Blood Syr. 23% Alc.
 Magn. Oint. O.K.
 Stella Vitae. 25% Alc.
 Worm Syr. 3% Alc.
 Thedorn's Liver Med. O.K.
 Thomas's Elect. Oil. O.K.
 Thompson's Eye Water. 10% Alc., $1\frac{1}{4}$ grs. Opli. to oz.
 W. Cherry Phos., 52-100% Cologne Spts.

- Thuma's Anti-Bilious Tabs. O.K.
 Blood Purif. 12% Alc.
 Condit. Po. O.K.
 Cough Syr. 10% Alc., 11-100 grs. Opl., 7-2% Chlorof. to oz.
 Diarrhoea Comp. 74% Alc., 5.06 grs. Opl. to oz.
 Fancy Balm for Catarrh. 6 grs. Acetanilid per oz.
 Giant Healing Salve. O.K.
 Great Pain Reliever. 81% Alc., 23.8m. Chlorof. per oz.
 Ozone Lini. O.K.
 W. Oil Lini. O.K.
 Wonder. 12 grs. Acetanilid to tab.
 Worm Candles. O.K.
 Tichenor's Antisep. Refrigerant. 70% Alc.
 Tiko. 1½% Alc.
 Tilden's Firwein. 35% Alc.
 Tr. Cadomene. 65% Alc.
 Tindal's Eucalyptus No. 1. O. K.
 Eucalyptus No. 2. 6 dr. Alc.
 Tippecanoe Bitters. 24% Alc.
 Toco Lolo. 50% Alc.
 Todd's Spavin Cure. 50% Alc.
 Tongaline. 33% Alc.
 Tabs. O. K.
 Lithia Tabs. O. K.
 Quinine Tabs. O.K.
 Tonita. 26% Alc.
 Ton-Ka-Way Oil. 63% Alc., 2½m. Chlorof. to oz.
 Tonsilene. 8% Alc.
 Townsend's Cholera Balm. 33% Alc., 2½m. Ether, 2½m. Chlorof., ¼ gr. Opl.
 to oz.
 Hay Fever & Catarrh Cure. 11% Alc.
 Pills. O.K.
 Sarsa. Comp. 20% Alc.
 Towsley's Sneezelss Snuff. ¼ gr. Morph. to oz.
 Traxo. 18% Alc.
 T. Rheu. Cure. 20% Alc.
 Triacal. 16% Alc.
 Tricopherus. 81% Alc.
 Triner's Amer. Bitter Wine. 16% Alc.
 Trommer's Ext. of Malt. 2% Alc.
 Trusler's Cough Rem. 7% Alc., ¼ gr. Morph. to oz.
 Trussler's Rheum. Tabs. O.K.
 Tuibereine. 20% Alc. .019m. Opl. to oz.
 Turnbull's Curine. O.K.
 Tutonia Stomach & Kidney Cure. 18% Alc.
 System Tone. 18% Alc.
 Tuttle's Elix. 30% Alc.
 Family Elix. O.K.
 Twentieth Century. O.K.
 Uncle Sam's Lini. O.K.
 Uno S. & G. O.K.

Up-John's Caro-Pepsin. 31% Alc.

Uriform. 20% Alc.

Utero Tonic. 30% Alc.

Vapo-Cresolene. O.K.

Vapor-OL No. 1. 30% Alc.

No. 2. O.K.

No. 3. O.K.

No. 4. O.K.

No. 5. O.K.

No. 6. 40% Alc., 3 grs. Opl. to oz.

No. 7. O.K.

No. 8. O.K.

No. 9. O.K.

Van's Mexican Hair Rest. .008% Alc.

Van Wort's Balsam. 4m. Chlorof., 1-3 gr. Morph. to oz.

Vaughn's Burdock Root. 31% Alc.

Veg. Lithontripis. 12% Alc.

Vedonia. O.K.

Vegazol. O.K.

Vegene. 12% Alc.

Catarrh Cure. O.K.

Oint. O.K.

Veg. Pulmonary Balsam. 18% Alc., 1½ grs. Opl. to oz.

Verna Palmettona. 17% Alc.

Vernal Female Tonic. 17% Alc.

Palmetto Iron & Nerve Tabs. O.K.

V. I. G. 1 gr. Morph.

Vinlax. 16% Alc.

Vin Mariana. 17% Alc.

Vino Kolafra. 18% Alc.

Vinol. 18% Alc.

Virgin Oil of Pine. O.K.

Vitae Ore. O.K.

Vital Vim. O.K.

Vitalized Phosphates. O.K.

Vito Aerial Germicide. O.K.

Vogler's Burdock Root Oil. 31% Alc.

Voigt's Gadine Cord. 14% Alc.

Wa-Hoo. O.K.

Wakefield's Blkberry Balsam. 12% Alc., 0.7 gr. Opl. to oz.

Comp. Syr. Horehound. 12% Alc., 12m. Tr. Opl. to oz.

Hair Tonic. 50% Alc.

Rheu. Cure. 4% Alc.

Tonic. 18.3% Alc.

Walnutta Hair Dye. 2% Alc.

Walnut Leaf Hair Rest. 11% Alc.

Walther's Peptonized Port. 20% Alc.

Wampole's As-par-o-line Comp. 50% Alc.

Creo-Terpin Comp. 25% Alc., 1-6 gr. Heroin. to oz.

Ext. C. I. O. 20% Alc.

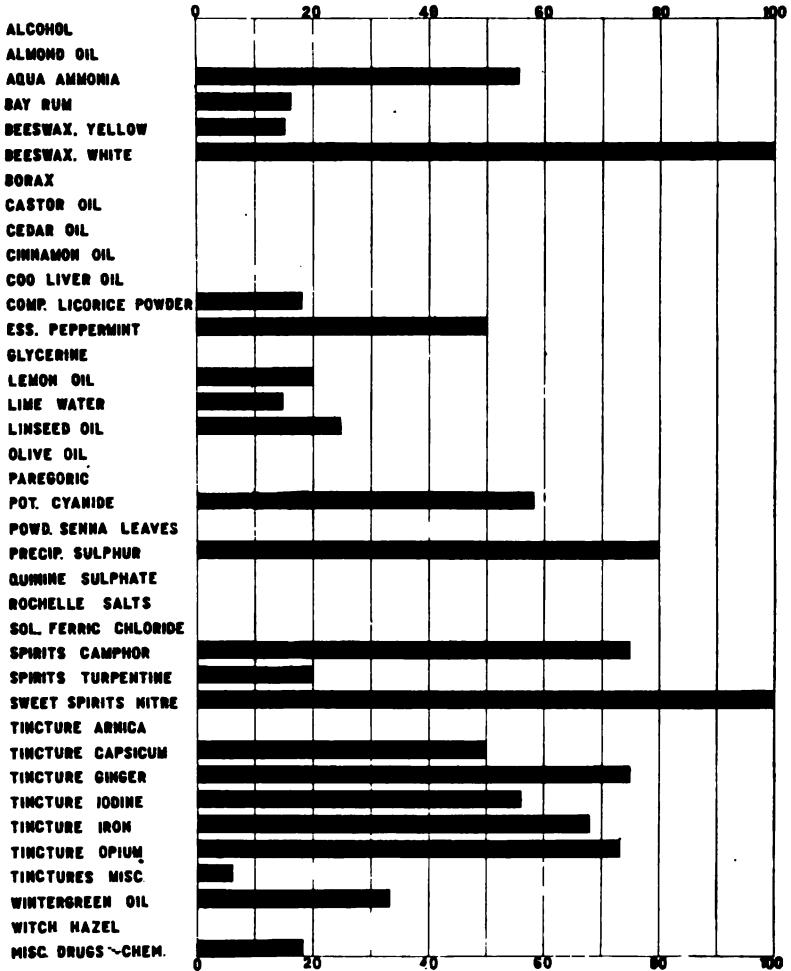
Formolid. 15% Alc., 2 gr. Acetanilid.

- Ward's Balsam of Cherry. 25% Alc., 1-120 gr. Morph. to oz.
 Linl. 46% Alc., 1 gr. Opii. to oz.
 Warner's German Hop Bitters. 23% Alc.
 Log Cabin Ext. 65.2% Alc.
 Log Cabin Hops and Buchu. 23% Alc.
 Log Cabin Sarsa. 24% Alc.
 Pills. O.K.
 Safe Diabetes Cure. 15% Alc.
 Safe K. & L. Cure. 15% Alc.
 Safe Nervine. 15% Alc.
 Safe Rheu. Cure. 11.4% Alc.
 Tono. Sumbul. 20% Alc.
 W. Wine Syr. 2% Alc., 3-5m. Opii. to oz.
 Wasson's King of Pain. 77% Alc., 1m. Ethyl Nitrite.
 Waterbury's C. O. L. 11% Alc.
 Wayne's Buchu-Juniper. 25% Alc.
 Diuretic Elix. 25% Alc.
 Weaver's Salt Rheum Syr. 20% Alc.
 Week's-Break-Up-A-Cold. 0.5 gr. Acetanilid to tab.
 Cold Tabs. 0.5 gr. Acetanilid to tab.
 Welbourn's Elix. Sweet Bugle. 28% Alc.
 Anti-Bil. Pill. O.K.
 Coca Linl. 57% Alc., 1-15 gr. Cocaine to oz.
 Crocus Lung Syr. 33% Alc., 1-40 gr. Opii. to oz.
 M. F. & B. Pills. O.K.
 Pile Oint. O.K.
 Queen of Tonic. 34% Alc.
 Rheu. Aegis. 31% Alc.
 Rose Oint. 1-24 gr. Morph. Sulph. to oz.
 W. P. & I. Pills. O.K.
 Well's Dime Headache. 240 gr. Acetanilid to oz.
 English Pills. O.K.
 Hair Tone. 25% Alc.
 Health Renewer. 35% Alc.
 Meadow Flower. 25% Alc.
 Westar's W. Cherry Balsam. 15% Alc., 5-64 gr. Opii. to oz.
 Westphall's Auziliator. 55% Alc.
 West's Nerve & Brain Treatment. O.K.
 Wheel-in-Your-Head. 2 gr. Acetanilid to tab.
 Wheeler's Tissue Phos. 12% Alc.
 Vitalizer. O.K.
 Whitehall's Megrinne. 228 gr. Acetanilid to oz.
 Rheu. Cure. 234 gr. Acetanilid to oz.
 White's Cough Syr. 6% Alc.
 Cream Vermifuge. O.K.
 Dandelion. 20% Alc.
 White's Diarrhoea Cord. 26% Alc., 10.6m. Tr. Opii., 0.5m. Chlorof.
 Neuralgia Remedy. 25% Alc.
 Pine Cough Syr. 9% Alc.
 Pulmonary Balsam. 18m. Alc., $\frac{1}{2}$ gr. Opii., 3m. Chlorof. to oz.

- Quick Relief. O.K.
 Rheu. Herb Lini. O.K.
 Sarsa. 18% Alc.
 Whitman's Cough Balsam. 39% Alc.
 K. & L. 14.3% Alc.
 Veg. Wonder. 86.3% Alc.
 Wildcat Lini. 50% Alc.
 Wilder's Cough Syr. 5% Alc.
 Diarrhoea Cord. 20% Alc.
 Mount. Tonic. 5% Alc.
 Sarsa. 14% Alc. (Old.)
 Stomach Bitters. 14% Alc.
 Tooth Ache Drops. 20% Alc.
 Wild Potato Root. 15% Alc.
 Winchell's Teething Syr. O.K.
 Winchester's Hypophos. O.K.
 Wine of Cardui. 20% Alc.
 Wing's Worm Remedy. 23% Alc., 73m. Ether to oz.
 Winslow's Soothing Syr. 5% Alc., 1-10 gr. Opl. to oz.
 Wintersmith's Tonic Syr. 27% Alc.
 Wire Fence Lini. O.K.
 Wishart's Pine Tree Cord. 17% Alc.
 Wister's Balsam. 15% Alc., $\frac{1}{2}$ gr. Opl. to oz.
 Witch Hazel. 15% Alc.
 Wizard Oil. 70% Alc.
 Wolford Sanitary Lotion. O.K.
 Women's Health Restorer. O.K.
 Woodbury's Hair Tonic. 41% Alc.
 Wood's Pine Syr. Comp. 20% Alc., $\frac{1}{2}$ gr. Morph., 9m. Chlorof. to oz.
 Wooster's Corn & Bunion Remedy. 19% Alc.
 Wray's Rheu. & Malarial Cure. 2% Alc.
 Wrightman's Sovereign Balm of Life. 20% Alc.
 Wright's Instant Relief. 3.5% Alc., 8m. Opl. to oz.
 Pills. O.K.
 Rheu. Remedy. 6% Alc., 2m. Ether.
 Wyeth's Steretol. 6% Alc.
 Liquid Rennet. 19% Alc.
 Prepared Food. 20% Alc.
 Sage and Sulphur. 2% Alc.
 Yankee Headache Po. 4 grs. Acetanilid to po.
 Zaegel's Ess. 22% Alc.
 Zemo. 86% Alc.
 Zimmer's Caffein & Acetanilid Comp. 2 grs. Acetanilid to oz.
 Zipp. O.K.
 Zmo. O.K.
 Zokoz. O.K.
 Zorophora. 16% Alc.
 Zozodont. 37% Alc.
 Zuma-Anana. 20% Alc.

PERCENTAGE OF ADULTERATION OF DRUGS IN INDIANA

1908



DRUGS.

During the year 866 samples of drugs have been collected and analyzed. Of this number 452 have been pure and 414, or 47.7 per cent., have been adulterated either by the addition of inert material, by the substitution of foreign substances, or because of the fact that they were below pharmacopoeial requirements. During 1906 the per cent of adulteration was 66.5, and in 1907 52.9. The figures this year show, therefore, some improvement in the character of the drugs sold in the State. This is especially true of goods on hand since that portion of the law went into effect March 1, 1908. The apathy existing among the drug trade seems to have entirely disappeared with the new interest in their work aroused by the labor necessary to put stock in condition to meet the requirements of the new law. Samples of drugs collected and analyzed during April and May showed a very great improvement over samples collected earlier in the year, which can be attributed to no other cause than that above noted. At the present time both the wholesale and retail drug trade understand the law fully and are evidently conscientiously endeavoring to meet its every requirement. While some difficulty is occasionally experienced by the retailer in correctly stating the amount of alcohol or opiates in his prescriptions, yet on the whole nothing save praise can be given the trade. The "warning notices" have been sent out as usual whenever goods were found to be below standard, and explanations and replies have been in almost every case received promptly. The paper elsewhere given, showing the deterioration of some of the pharmaceuticals which have been commonly below standard, was presented before the State Pharmaceutical Association, and the results of the investigation are now apparently well understood, as druggists are no longer explaining the cause of their low grade tinctures or iodine and camphor by stating that the goods lose strength through age.

There is still apparently a lack of laboratory facilities in drug stores. Since the state pharmacy law requires a graduate pharmacist to be in every store, it would seem possible for druggists to determine for themselves the character of the preparations they dispense. Certainly there can be no excuse for the druggist who sells impure lime water, dilute aqua ammonia or tinctures of inferior strength. Simple chemical tests, some of which involve only the use of the hydrometer, will determine accurately the character of many preparations heretofore commonly adulterated, and druggists should no longer delay the application to their daily work of

the training they received in college. It is to be regretted that so much of the work of the modern druggist is performed in the front part of the store, and that so little time is given to those important pharmaceutical practices which differentiate the real druggist from the mere purveyor of toilet articles, soda waters and patent medicines.

A report of the inspection of drug stores shows the sanitary conditions to be on the whole very satisfactory. Occasionally soda fountains have been found which were unclean, where floors were dirty and littered, and where sidewalls and ceilings were covered with soot and cobwebs accumulated during past years. Of the drug stores inspected during the year 57 were in excellent condition, the stock was well kept, free from dust and neatly arranged. The mirrors and glassware were polished and shining, floors were scrupulously clean, and the prescription case showed every evidence of being in the hands of a neat and competent clerk. Eight hundred and eight stores were in good condition and 167 were in fair shape. Second and third inspections have always shown a decided improvement and a desire on the part of the proprietor to satisfy the demands of the exacting inspector. While stocks of patent and proprietary goods on hand at the time the new law went into effect were in many instances not properly labeled, the trade was careful to set aside such goods, marked "Not for sale," till they could be properly labeled and put back in stock. The amount of old goods that had been cumbering the shelves of druggists for years was astonishing even to the druggists themselves. Many preparations were found taking up valuable space that bore the tax stamp issued during the civil war. Other goods, still possessing some life as sellers and occasionally demanded, were in such a condition of uncleanness that they were unsalable. All such goods were forced off the shelves by the new law to make way for quick-selling new goods or more profitable preparations. The loss to the trade, because of the inability to dispose of notoriously fraudulent preparations may have in the aggregate amounted to considerable, but no one realized better than the drug trade itself the benefit to business and good morals of the general housecleaning which has taken place this last year.

AQUA AMMONIA.

One hundred and*thirteen samples of aqua ammonia were analyzed this year. Of this number 50 were pure and 63 were below standard. This is equivalent to a percentage of adulteration of 55.7. This high percentage is due entirely to carelessness on

the part of the retailer. While it is true that certain goods purchased from the wholesaler are below standard when placed in stock, yet the ease with which this may be ascertained by the use of the hydrometer leaves no excuse possible for the druggist who is dispensing aqua ammonia below the proper strength. Aqua ammonia itself deteriorates rapidly when kept in an uncorked bottle, yet we have shown that even a good velvet cork will prevent the escape of gaseous ammonia, and that a well ground glass-stoppered bottle will hold aqua ammonia up to standard for an indefinite period.

AQUA AMMONIA—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity 20° C.	Per Cent. NH ₃ .	Per Cent. U. S. P.
10025	L. E. Kinsey & Co.	New Castle.	.9498	11.82	118.2
10043	F. E. Wills.	Cambridge City.	.9495	11.61	116.1
10358	D. F. Campbell & Bro.	Muncie.	.9495	11.80	118.0
10484	A. H. Fehring.	Columbu.	.9498	11.40	114.0
10604	H. M. Holmes.	Columbus.	.9500	11.50	115.0
10559	Muts & Lynch.	Edinburg.		11.44	114.4
12139	Rob. Navin.	Indianapolis.	.9577	10.11	101.1
12147	Ed Stucky.	Indianapolis.	.9525	11.41	114.1
12149	H. J. Huder.	Indianapolis.	.9478	12.63	126.3
12157	Ed Ferger.	Indianapolis.	.9510	11.76	117.6
12161	J. J. Keene.	Indianapolis.	.9520	11.51	115.1
12221	J. C. Mead.	Indianapolis.	.9525	11.48	114.8
12235	H. D. Bassett.	Indianapolis.	.9537	11.13	111.3
12237	L. Haag.	Indianapolis.	.9540	11.09	110.9
12233	J. C. Clark.	Indianapolis.	.9483	12.51	125.1
12243	Robt. P. Blodan.	Indianapolis.	.9510	11.77	117.7
12251	J. A. Stucky.	Indianapolis.	.9403	15.13	151.3
12253	C. T. Bedford.	Indianapolis.	.9590	10.04	100.
12263	L. N. Himes.	Indianapolis.	.9523	11.76	117.6
12268	Chas. Traub.	Indianapolis.	.9555	10.68	106.8
12271	A. Brown.	Indianapolis.	.9528	11.44	114.4
12282	J. M. Rhodes.	Indianapolis.	.9405	14.78	147.8
12285*	Carnetix Bros.	Indianapolis.	.9535	8.56	85.6
12290	L. B. King.	Indianapolis.	.9468	13.09	130.9
12302	Vermilya Pharmacy.	Bloomington.	.9555	10.73	107.3
12335	J. P. Riley.	Paoli.	.9467	13.13	131.3
12365	Wm. Moss & Co.	Spencer.	.9570	10.30	103.0
12368	Louis Schmidt.	Spencer.	.9533	11.39	113.9
12371	J. R. Layman.	Spencer.	.9550	11.01	110.1
12378	P. T. Jett.	Clay City.	.9582	10.35	103.5
12428	W. H. Peters.	Madison.	.9462	13.51	135.1
12430	W. H. Rogers.	Madison.	.9577	10.40	104.0
12436	J. E. C. F. Harper & Co	Madison.	.9425	14.33	143.3
12445	Jas. Hargan, Jr.	Madison.	.9529	11.81	118.1
12450	Don Davis.	North Vernon.	.9508	12.43	124.3
12457	J. L. Doggett.	North Vernon.	.9351	16.88	168.8
12459	Rigish Drug Co.	Martinsville.	.9551	11.55	115.5
12461	T. C. Wood.	Franklin.	.9183	21.90	219.0
12463	A. W. Owen.	Greenwood.	.9483	12.90	129.0
12492	Frost & Mason.	Marion.	.9575	10.87	108.7
12494	John Davis.	Marion.	.9425	14.55	145.5
12499	R. L. Lander.	Marion.	.9568	10.44	104.4
12529	W. Hamaker.	Peru.	.9583	10.04	100.4
12531	Thieshaud & Co.	Peru.	.9550	11.09	110.9
12537	Chickasaw Pharmacy.	Peru.	.9547	11.08	110.8
12612	A. F. Long.	Rensselaer.	.9485	13.03	130.3

HOUSEHOLD AMMONIA.

10925	Benj. F. Howell.	Danville.	3.57
10944	J. L. Darnell.	Danville.	1.66
10962	T. C. Wampler.	Gosport.	2.66
12483	W. M. Hildebrand.	Marion.	9.29

*Labeled "Not over 6 per cent. in strength."

AQUA AMMONIA—ILLEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Per Cent. NH ₃ .	Per Cent. U. S. P.
9867	A. C. Pilkenton	Greenfield	.9770	4.88	48.8
9873	M. C. Quigley	Greenfield	.9730	5.57	55.7
9921	J. T. Butler	Knightstown	.9668	7.22	72.2
10007	Wm. Pence	New Castle	.9598	8.85	88.5
10049	Dr. Johnson	Cambridge City	.9718	5.91	59.1
10258	Fred Drake	Van Buren	.9667	7.28	72.8
10264	W. G. Sims	Swayzee	.9612	8.58	85.8
10460	T. J. Noblett	Columbus	.9728	6.74	67.4
10500	Ernest Seahhuth	Columbus	.9635	8.03	80.3
10506	Theo. E. Otto	Columbus	.9653	7.50	75.0
10511	Muts & Lynch	Edinburg	.9603	8.89	88.9
10558	Sent in from Edinburg			9.85	98.5
11030	Kiah Steppy	Bicknell	.9640	3.51	35.1
11318	W. W. Jones	Greencastle		9.69	96.9
12124	Hargrove & Mullin	Rushville	.9630	8.71	87.1
12135	F. B. Johnson Co.	Rushville	.9645	8.24	82.4
12150	D. M. Moroney	Indianapolis	.9585	9.78	97.8
12160	Waddell & Waterhouse	Indianapolis	.9580	9.63	96.3
12176	H. O. Atchinson	Indianapolis	.9620	8.71	87.1
12181	Francis Pharmacy Co.	Indianapolis	.966	7.88	78.8
12215	F. H. Carter	Indianapolis	.9625	8.85	88.5
12236	Wm. Burk	Indianapolis	.9607	9.24	92.4
12239	A. M. Eyster	Indianapolis	.9618	8.94	89.4
12248	J. F. McKee	Indianapolis	.9688	7.18	71.8
12260	Gus Feyer	Indianapolis	.9610	9.12	91.2
12278	E. H. Wilson	Indianapolis	.9587	9.76	97.6
12290	H. H. Jeffries	Bloomington	.9723	6.12	61.2
12305	Wood Wiles	Bloomington	.9688	7.15	71.5
12312	Bowles Bros.	Bloomington	.9590	9.82	98.2
12324	C. E. Franklin	Bedford	.9690	7.06	70.6
12331	Beddoe & Christie	Bedford	.9643	8.45	84.5
12344	Sent in from Bloomington		.9643	8.43	84.3
12346	Sent in from Bloomington		.9585	9.74	97.4
12347	Sent in from Paoli		.9638	8.64	86.4
12369	O. E. Dunn	Spencer	.9655	8.55	85.5
12375	J. W. Danhour	Clay City	.9593	9.67	96.7
12385	Bynum Bros.	Bloomfield	.9672	7.65	76.5
12388	W. S. Ambaker	Bloomfield	.9485	8.25	82.5
12397	Moore's Drug Store	Worthington	.9730	6.14	61.4
12425	W. G. Haberhart	Madison	.9723	6.21	62.1
12430	Gibson & Riedel	Madison	.9599	9.52	95.2
12446	J. M. Dills	North Vernon	.9610	9.62	96.2
12462	C. H. Drybread	Franklin	.9705	6.92	69.2
12477	Overman Pharmacy	Marion	.9585	9.93	99.3
12524	R. E. Murphy	Peru	.9588	9.91	99.1
12535	Blue Drug Store	Peru	.9663	7.95	79.5
12546	S. F. Porter	Peru	.9600	9.58	95.8
12622	W. D. Handley	Monon	.9626	8.94	89.4
12126	Thos. W. Lytle	Rushville	.9773	4.91	49.1
12132	Frank Walcott	Rushville	.9628	8.53	85.3
12211	I. W. Hollenbeck	Indianapolis	.9607	9.15	91.5
12321	Dodd & Douthitt	Bedford	.9735	5.81	58.1
12329	Austin & Son	Bedford	.9705	6.50	65.0
12345		Bloomington	.9663	7.89	78.9
12378	W. C. Duncan	Clay City	.9606	9.30	93.0
12382	Sherster Bros.	Bloomfield	.9633	8.77	87.7
12393	W. F. Crook	Worthington	.9693	2.18	21.8
12403	Cooper & Son	Worthington	.9575	2.62	26.2
12471	Bradley Bros.	Marion	.9723	6.58	65.8
12479	A. W. Leedy	Marion	.9665	7.78	77.8
12496	J. A. Thomas	Marion	.9613	4.14	41.4
12606	J. A. Lerah	Reenscler		3.05	30.5
12615	B. F. Fendig	Reenscler	.9706	5.74	57.4

BEESWAX.

Thirteen samples of yellow beeswax were analyzed, only two of which were found to be adulterated. Such a report is decidedly gratifying, especially since earlier work has shown this article to be almost always grossly adulterated.

BEESWAX (YELLOW)—LEGAL.

Lab. No.	Name.	Address.	Butyro at 65° C.	Melting Point.	Per Cent. U. S. P.
9863	A. C. Pilkenton.....	Greenfield.....	32.1	62.5	100.0
9876	M. C. Quigley.....	Greenfield.....	29.7	63.5	100.0
9896	V. L. Early.....	Greenfield.....	31.2	62.5	100.0
10010	Beam & Lynn.....	New Castle.....	29.9	63.0	100.0
10018	G. F. Mowrer.....	New Castle.....	29.5	63.0	100.0
10244	Rothinghouse Bros.....	Jonesboro.....	30.5	65.0	100.0
10251	W. B. Teeter.....	Upland.....	29.9	64.5	100.0
10270	Lawhe Drug Store.....	Swaysee.....	30.0	62.5	100.0
10479	J. W. Meiser.....	Monticello.....	29.5	63.0	100.0
10222	Badger & Green.....	Greencastle.....	30.3	65.0	100.0
12543	Chickasaw Pharmacy.....	Feru.....	31.3	65.5	100.0

BEESWAX (YELLOW)—ILLEGAL.

Lab. No.	Name.	Address.	Butyro at 65° C.	Melting Point.	Remarks.
10927	J. C. Marsh.....	Danville.....	13.9	49.0	Colored paraffin.
11674	E. Roquet.....	Indianapolis.....	19.0		¹ Paraffin 65 to 70%.

¹Saponification value 26.6.

CASTOR OIL.

Ten samples of castor oil were analyzed, all of which were found to meet the U. S. P. requirements. The adulteration of the well-known oils seems to be little practiced.

CASTOR OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 25° C.	Butyro at 20° C.	Polarisation.
9882	W. S. Pugh.....	Greenfield.....	.9570	79.8	12.6
9892	W. S. Early.....	Greenfield.....	.9570	80.4	12.7
9907	A. C. Fouche.....	Knightstown.....	.9580	80.3	12.6
9915	M. Reeves.....	Knightstown.....	.9575	80.5	12.7
9922	J. T. Butler.....	Knightstown.....	.9570	80.3	12.5
10006	Wm. N. Pence.....	New Castle.....	.9565	80.9	12.6
10027	L. E. Kinsey Co.....	New Castle.....	.9570	80.4	12.6
10034	Ed Smith.....	New Castle.....	.9565	80.5	12.6
10247	W. B. Teeter.....	Upland.....	.9575	80.0	12.7
10274	P. R. McLeod.....	Summitville.....	.9570	80.3	12.9

COMPOUND LICORICE POWDER.

Of the eleven samples of compound licorice powder analyzed, nine were found to be legal. The other two samples were evidently plain licorice powder.

COMPOUND LICORICE POWDER.

Lab. No.	Name.	Address.	Per Cent. Sugar.	Per Cent. Total Ash.	Per Cent. Insoluble Ash.	Per Cent. Soluble Ash.	Remarks.
7606	O. H. Overman	Marion.....	42.5	4.34	0.87	3.47	Legal.
7615	Hildebrand & Ansley..	Marion.....	41.9	3.90	1.86	2.04	Legal.
9647	F. S. Ledbetter.....	Connersville.....	47.3	7.69	1.01	6.68	Legal.
9887	V. L. Early.....	Greenfield.....	44.3	6.66	2.31	4.35	Legal.
9909	P. D. Brown.....	Knightstown.....	50.9	5.54	2.29	3.25	Legal.
10021	Wm. F. Mowrer.....	New Castle.....	51.5	8.51	2.64	5.87	Legal.
10030	Ed Smith.....	New Castle.....	54.5	8.69	2.63	6.16	Legal.
10245	Rothinghouse Bros.....	Jonesboro.....	53.3	4.90	1.62	3.28	Legal.
10250	W. B. Teeter.....	Upland.....	53.6	5.67	3.56	2.11	Legal.
10041	F. W. Wills.....	Cambridge City.....	1.8	5.10	0.65	4.49	¹ Illegal.
10050	Dr. Johnson.....	Cambridge City.....	5.4	5.79	0.28	5.51	² Illegal.

¹Plain licorice powder.²Not a compound licorice.

ESSENCE OF PEPPERMINT.

Four of the eight samples analyzed were of U. S. P. strength, containing 10 per cent of peppermint oil dissolved in 80 per cent of alcohol. Two of the four illegal contained a sufficient amount of alcohol, but were deficient in the oil content.

ESSENCE PEPPERMINT—LEGAL.

Lab. No.	Name.	Address.	Alcohol by Vol. at 20° C.	Per Cent. Oil	Per Cent. U. S. P.
7085	Waddell & Walterhouse.....	Indianapolis.....	80.7	10.0	100.0
7242	Francis Pharmacy.....	Indianapolis.....	79.9	10.0	100.0
9218	Watson Drug Store.....	Corydon.....	72.2	10.0	100.0
11090	Huder's Pharmacy No. 2.....	Indianapolis.....	.....	10.4	104.0

ESSENCE PEPPERMINT—ILLEGAL.

Lab. No.	Name.	Address.	Alcohol by Vol. at 20° C.	Per Cent. Oil	Per Cent. U. S. P.
7036	Rhodes Pharmacy.....	Indianapolis.....	80.7	4.6	46.0
7839	Brown Drug Co.....	Lafayette.....	.....	6.4	64.0
8705	Gibson & Riedel.....	Madison.....	79.9	8.2	82.0
11482	Sent in from Tipton.....	.....	.....	9.6	96.0

¹Contains sugar.

GLYCERINE.

Of six samples of glycerine analyzed, all were of average quality, although none were strictly U. S. P. In our experience it is not possible to purchase a glycerine sufficiently free from butyric acid and organic matter to meet these requirements.

GLYCERINE.

Lab. No.	Name.	Address.	Specific Gravity at 20°C.	Butyric Acid.	SO ₄ .	Ca.	Cl.	Oxalates.	Organic Matter.
10013	Beam & Lynn...	New Castle.....	1.243	Trace..	+	Trace.	—	—	Trace.
11170	J. J. Lantz.....	Warsaw.....	1.246	Trace..	—	—	—	—	Trace.
11172	Chas. Shrover...	Warsaw.....	1.249	Trace..	—	—	—	—	Trace.
11174	F. H. Gilworth...	Warsaw.....	1.253	Trace..	+	—	—	—	Trace.
11899	Bert A. Drees...	Lafayette.....	1.247	—	—	—	—	—	Trace.
12707	J. D. Helderle...	Peru.....	1.254	Trace..	+	Trace.	—	—	Trace.

Note—These samples are of verage quality, but are not strictly U. S. P.

LEMON OIL.

Four of the five lemon oils analyzed were pure. One sample did not meet the requirements in any particular, and was evidently a mislabeled article.

LEMON OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Butyro at 20° C.	Polarization.	Opt. Rot.
9890	W. S. Pugh.....	Greenfield.....	.8507	74.5	+172.4	+59.7
9891	V. L. Early.....	Greenfield.....	.8530	73.7	+165.8	+57.5
9922	A. C. Fouche.....	Knightstown.....	.8533	74.5	+167.2	+58.0
10024	L. E. Kinsey & Co.	New Castle.....	.8606	76.5	+169.0	+58.6

LEMON OIL—ILLEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Butyro at 20° C.	Polarization.	Opt. Rot.
10006	Wm. N. Pence.....	New Castle.....	.9438	93.3	+31.8	+11.0

LIME WATER.

Of the 75 samples of lime water analyzed during the year, 64, or 85.3 per cent, were above the pharmaceutical requirements. This is a great improvement over the figures obtained last year, when 56.7 per cent were illegal. The druggist has evidently learned that lime water and the air of the ordinary drug store are incompatibles. But two samples of the entire number analyzed were practically worthless.

LIME WATER—LEGAL.

Lat. No.	Name.	Address.	Per Cent. U. S. F.
12234	J. C. Clark	Indianapolis	114.7
12235	Wm. Birk	Indianapolis	102.1
12242	Robt. Blodau	Indianapolis	112.1
12252	J. A. Conkey	Indianapolis	122.1
12259	Gus Fenger	Indianapolis	102.0
12270	A. Brown	Indianapolis	106.4
12277	E. H. Wilson	Indianapolis	116.8
12281	J. M. Rhodes	Indianapolis	118.9
12285	Carnegie Bros.	Indianapolis	121.0
12289	L. B. King	Indianapolis	121.6
12295	Messick & Dodd	Bedford	114.7
12298	H. H. Jefferies	Bloomington	116.3
12303	Wood Wiles	Bloomington	116.8
12327	Austin & Son	Bedford	119.4
12332	Beddoe & Christie	Bedford	123.6
12363	Wm. Moss & Co.	Spencer	116.0
12380	W. S. Ambaker	Bloomfield	105.2
12404	Moore's Drug Store	Worthington	124.7
12424	W. G. Haberhart	Madison	118.9
12429	W. H. Peters	Madison	125.6
12434	J. E. C. F. Harper & Co.	Madison	118.4
12438	Gibson & Reidel	Anderson	117.2
12442	Jas. Hargan, Jr.	Madison	112.1
12452	John Davis	North Vernon	101.5
12455	J. L. Doggett	North Vernon	120.0
12476	Overman Pharmacy	Marion	121.0
12447	J. M. Dills	North Vernon	115.7
12482	A. W. Leedy	Marion	110.5
12489	Freel & Mason	Marion	109.8
12496	John Davis	Marion	119.7
12522	R. E. Murphy	Peru	120.5
12526	W. Haymaker	Peru	130.7
12533	Blue Drug Store	Peru	136.8
12540	Chickasaw Pharmacy	Peru	118.9
12541	Chickasaw Pharmacy	Peru	111.5
12547	S. F. Porter	Peru	112.1
12750	Jett's Drug Store	Clay City	124.2
10168	J. B. Wehrle	Anderson	123.6
10169	J. A. Rust	Anderson	120.0
12170	W. C. Roush	Anderson	105.7
10171	E. T. Brickley	Anderson	113.6
10173	Geo. A. Cox	Anderson	106.4
10888	W. W. Reed	Winchester	115.7
11266	H. Tepe	Evansville	122.1
11319	W. W. Jones	Greencastle	124.2
12123	Hargrove & Mullen	Rushville	111.0
12127	Thos. W. Lytle	Rushville	114.2
12131	Frank Walcott	Rushville	119.5
12134	F. P. Johnson & Co.	Rushville	111.6
12140	Rob. Navin	Indianapolis	128.9
12142	Lou Stockman	Indianapolis	123.7
12145	Ed Stacky	Indianapolis	120.4
12150	H. J. Huder	Indianapolis	116.3
12168	Waddell & Walterhouse	Indianapolis	119.5
12173	W. H. Burget	Indianapolis	110.0
12180	Francis Pharmacy Co.	Indianapolis	114.2
12188	Will E. Axline	Noblesville	118.9
12193	Chas. Mitchell	Noblesville	117.9
12196	A. G. Baldwin	Noblesville	112.6
12213	T. W. Hollenbeck	Indianapolis	115.8
12218	F. H. Carter	Indianapolis	120.5
12220	J. C. Mead	Indianapolis	117.9
12226	H. D. Bassett	Indianapolis	127.3
12229	L. Haag	Indianapolis	116.3

LIME WATER—ILLEGAL.

Lab. No.	Name.	Address.	Ca (OH) ₂ Grams per 100 C.C.	Per Cent. U. S. P.
10357	V. E. Silverberg	Muncie	.1272	91.0
12364	I. N. Hains	Indianapolis		77.9
12379	P. T. Jett	Clay City		93.6
12431	W. H. Rogers	Madison		95.2
12458	Watson & Bass	Martinsville		55.2
12460	D. W. Rignish	Martinsville		77.3
12474	Bradley Bros.	Marion	.0632	45.2
12608	J. A. Larrh	Rensselaer	.0044	3.1
12610	A. F. Long	Rensselaer	.0191	12.6
12614	B. F. Fendig	Rensselaer	.0669	47.8
12400	Cooper & Son	Worthington	.0676	48.4

LINSEED OIL.

Three of the four linseed oils analyzed were legal, the illegal sample containing 25 per cent of petroleum oil.

LINSEED OIL—LEGAL.

Lab. No.	Name and Address.	Specific Gravity at 25° C.	Saponification No.	Iodine No.	Butyro at 20° C.	Maumene No.
8941	Sent in from Hammond	.9277	184.4	160.8	84.0	119.5
9942	Sent in from Madison	.9265	184.8	165.3	84.2	117.0
10384	Sent in from Lafayette	.9268	185.0	181.9	84.2	119.5

LINSEED OIL—ILLEGAL.

Lab. No.	Name and Address.	Specific Gravity at 25° C.	Butyro at 20° C.	Saponification Value.	Iodine Value.	Per Cent. Unsaponified Matter	Per Cent. Petroleum Oil
11463	Sent in from Washington	.9040	80.8	136.3	135.9	26.8	25.0

OLIVE OIL.

Twenty-nine samples of olive oil were analyzed during the year, and in no instance was an adulterated sample found. It is evident that this article as carried by the druggist is now free from cottonseed oil and other foreign oils once so commonly dispensed as olive oil.

OLIVE OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Butyro at 20° C.	Halphen Test.
9906	A. C. Fouche	Knightstown . . . . .	.9129	64.2	Negative.
9908	Paul B. Brown	Knightstown . . . . .	.9124	64.9	Negative.
9914	N. Reeves	Knightstown . . . . .	.9129	64.2	Negative.
10014	Beam & Lynn	New Castle . . . . .	.9132	64.4	Negative.
10026	L. E. Kinsey & Co.	New Castle . . . . .	.9127	64.3	Negative.
10047	G. E. Calloway	Cambridge City . . . . .	.9127	64.2	Negative.
10238	I. L. Klingensmith	Gas City . . . . .	.9137	64.5	Negative.
10241	Rothinghouse Bros.	Gas City . . . . .	.9132	64.5	Negative.
10243	Rothinghouse Bros.	Jonesboro . . . . .	.9127	64.6	Negative.
10252	T. M. Smith	Upland . . . . .	.9132	64.2	Negative.
10256	Corwell & Son	Van Buren . . . . .	.9148	64.5	Negative.
10261	Fred Drake	Van Buren . . . . .	.9138	64.3	Negative.
10266	W. G. Sims	Swayzee . . . . .	.9137	63.9	Negative.
10267	Lawshe Drug Store	Swayzee . . . . .	.9144	64.1	Negative.
10273	P. R. McLeod	Summitville . . . . .	.9142	64.4	Negative.
10359	D. P. Campbell & Co.	Muncie . . . . .	.9145	64.5	Negative.
10400	D. Montani & Co.	Indianapolis		64.1	Negative.
10508	Theo. E. Otto	Columbus . . . . .	.9124	64.3	Negative.
10560	Peoples' Drug Store	Lewesville . . . . .	.9124	64.3	Negative.
10653	Tarleton & Telford	Martinsville . . . . .	.9110	64.3	Negative.
10713	Sent in from Hagerstown . . . . .		.9110	64.4	Negative.
10822	Sent in from Michigan City . . . . .		.9100	64.6	Negative.
10930	C. E. Edwards	Danville . . . . .	.9130	64.5	Negative.
11097	L. L. Allen	Rushville . . . . .	.9130	64.8	Negative.
10206	Sent in from Richmond			64.7	Negative.
11258	Sent in from Oaktown . . . . .		.9123	63.0	Negative.
11754	Sent in from Muncie . . . . .		.9125	64.6	Negative.
11893	Sent in from Evansville . . . . .		.9130	65.2	Negative.
12727	Sent in from Indianapolis . . . . .		.9132	64.1	Negative.

PATENT MEDICINES.

When the rules relating to the labeling of patent medicines went into effect, many preparations were in the hands of the druggist for which they could obtain no formulas. In such instances the drug laboratory endeavored to provide the necessary formula. The following table gives the samples analyzed and the results obtained.

PATENT MEDICINES.

Lab. No.	Name of Preparation.	Name of Manufacturer.	Address.	Alcohol Volume at 20° C.	Chloroform Minims Per Oz.	Morphine Grains Per Oz.	Remarks.
10116	Isaac's Stomach Tonic.	Isaac's Pharmacy	Kennard, Ind.	32			Capsicum, ginger and sugar.
10541	New Life Rheumatic Cure.	O. C. Brown.	Martinsville.	Negative.		Negative.	Sod. Salicylate 10.1%.
10593	Cough Drops.	Royal Mfg. Co.	Indianapolis.				No alkaloids present.
10791	Cold Cream.	G. W. Hoffman.	Terre Haute.				No lead or mercury.
10888	Notoi.	Sent in from Indianapolis.					HgCl and H ₂ SO ₄ present.
10893	Ecacema Preparation.	Sent in from Geneva.					Chiefly salts of lead.
11373	Caesara Bromide Quinine.	W. H. Hill.	Detroit, Mich.				Properly labeled.
11374	Bromo Quinine.	Paria Medical Co.	St. Louis, Mo.				No alkaloids.
11584	U No Nerve Tablet.	Marilla Drug Co.	Chicago, Ill.	Negative.			Chiefly bichu.
11585	Kidney and Bladder Cure.	Dr. Gosson Medicine Co.	Chicago, Ill.	Negative.		Negative.	O. K.
11589	Relief Cough and Kidney Cure.	Sylvan Remedy Co.	Peoria, Ill.	Negative.		Negative.	Chiefly asafoetida.
11607	Home Treatment Women.	Dr. Stewart.	Unknown.	Negative.		Negative.	
11680	Obesity Cure.	Dr. Bronley Co.	New York.	Negative.		Negative.	
11775	Nerve and Brain Treatment.	Dr. E. E. West.	Unknown.	6.0		1-12	
11791	Tar and Wild Cherry Cough.	Dr. Gibson.	Unknown.	25.6			No alkaloids.
11828	Tonifin.	Lorena Medicine Co.	New York.	15.3			No alkaloids.
11829	McGill's Chili Cure.	A. A. McGill.	Louisville.	11.9			No alkaloids.
11830	Gorwila Stomach Bitters.	Gorwitz.	Unknown.	8.0			No alkaloids.
11831	Home Remedy.	Rouine Remedy Company.	Providence, R. I.	Negative.			No alkaloids.
11832	Head's Red Clover.	Sent in from Peoli.		19.8			No alkaloids.
11837	Head's Red Clover.	Beal Street Co.	New York.				No alkaloids.
11860	Dr. Ray's Panacea Comp. Kidney and Bladder Cure.	Consolidated Drug Co.	Unknown.	10.7			No alkaloids.
11881	Dr. Ray's Yellow Parilla Comp. Blood Purifier.	Consolidated Drug Co.	Unknown.				No alkaloids.
11981	Hooser Soothing Syrup.	Hooser Cough Syrup Co.	Boston.	14.8			No alkaloids.
11997	Viburnum Compound.	H. E. Zimmer.	Indianapolis.				No inhibited drugs.
12375	Dr. Bigelow's Positive Cure.	Griggs & Co.	Indianapolis.	15.4			
12375	Dr. Bigelow's Positive Cure.	Griggs & Co.	Ottawa.	0.9	2.0	1-10	
12581	Nerve Medicine.	Sent in from Elwood.					No arsenic.
12582	Nerve Medicine.	Sent in from Peru.					No arsenic.
12728	Asthma Cure.	Frontier Asthma Co.	Buffalo, N. Y.				No inhibited drugs.
12913	Cold Cream.	Sent in from Indianapolis.					No heavy metal salts.

Sugar 18.9 per cent. and other extractive matter 1.2 per cent.

*Tablets contain aloes and capsicum. Capsules contain boric acid and salt.

*Red pills contain aloes; pink pills nux vomica. The red and white tablets contain licorice, asafoetida, etc.

*Pot. Iodide 8 grains, caffeine 2 grains per 100 C.C.

PAREGORIC.

Fifteen samples of paregoric were analyzed and in most instances the composition was satisfactory.

PAREGORIC—LEGAL.

Lab. No.	Name.	Address.	Specific Grav. at 20° C.	Benzoic Acid, Grams per 100 G.C.	Alcoholic Volume at 20° C.	Opium.	Oil Anise.	Glycerine.	Camphor.
9220	L. A. Riley & Sons.....	Corydon.....	.9475	4.004	41.6	+	+	+	+
9221	L. A. Riley & Sons.....	Corydon.....	.9390	0.241*	44.2	+	+	+	+
9346	E. F. Cummings.....	Cannelton.....	.9548	0.617	37.7	+	+	+	+
9599	Morrison & Depres.....	Shelbyville.....	.9475	0.550	42.5	+	+	+	+
11035	J. S. Wills.....	Bicknell.....	.9377	0.368	48.9	+	+	+	+
11263	Geo. W. Haynes.....	Evansville.....	.9530	0.230*	41.7	+	+	+	+
11269	H. Tepe.....	Evansville.....	.9595	.....	38.8	+	+	+	+
11848	Sent in from Zionville.....	.....	.....	0.360	.....	+	+	+	+
11895	A. S. Kluth.....	Lafayette.....	.9405	.....	.....	.....	.....	.....	.....
11896	G. T. Driscoll.....	Lafayette.....	.9213	.....	.....	.....	.....	.....	.....
11914	Barton Cassody.....	West Terre Haute.....	.....	0.47	.....	+	.....	.....	.....
11917	Geo. L. Barry.....	West Terre Haute.....	.....	0.480	.....	+	.....	.....	.....
12356	White & Gillis.....	Clinton.....	.....	.....	46.5	+	.....	.....	.....
12359	Walter Allen.....	Greencastle.....	.....	.....	50.0	+	.....	.....	.....
12361	Fred Keller.....	Brasil.....	.....	.....	49.5	+	.....	.....	.....

*Low in benzoic acid.

POTASSIUM CYANIDE.

Seven of the 12 samples of potassium cyanide were below the pharmacopoeial requirements. This is due undoubtedly to a practice of the trade of handling cyanide of different strengths. This practice is unfortunate, since the chief use of the preparation, and a use which is constantly growing, is among nursery men who employ the poison in fumigating nursery stock. If low grade cyanide is used where the formula calls for full strength goods, the result of the disinfection may be unsatisfactory, in which case the false sense of security felt by the planter of fruit trees may result in a spread of destructive pests among his orchards.

POTASSIUM CYANIDE—LEGAL.

Lab. No.	Name.	Address.	Per Cent. CN.	Per Cent. KCN.	Remarks.
10871	W. B. Douglass.....	Indianapolis.....	37.1	92.9	.....
10873	W. B. Douglass.....	Indianapolis.....	35.9	97.6	.....
10874	W. B. Douglass.....	Indianapolis.....	40.1	100.4	.....
10992	Rose Hill Nursery.....	Boothland.....	38.2	98.2	.....
11822	S. W. Kepler.....	Pulaski.....	39.1	98.0	.....

POTASSIUM CYANIDE—ILLEGAL.

Lab. No.	Name.	Address.	Per Cent. CN.	Per Cent. KCN.	Remarks.
10872	S. W. Kephart.....	Pulaski.....	.....	0.0	Pot. ferro cyanide.
10876	J. H. B. White.....	Winchester.....	18.7	46.6	Low in cyanide.
10887	A. F. Sala.....	Winchester.....	11.0	37.6	Low in cyanide.
10880	Sent in from Montpelier.....	.....	19.4	48.6	Low in cyanide.
10881	Sent in from Montpelier.....	.....	21.2	53.2	Low in cyanide.
10887	E. E. White.....	Union City.....	31.7	79.4	Low in cyanide.
10888	J. E. Stewart.....	Union City.....	15.6	39.2	Low in cyanide.

POWDERED SENNA LEAVES.

The two samples analyzed met the pharmacopoeial requirements.

POWDERED SENNA LEAVES—LEGAL.

Lab. No.	Name.	Address.	Total Ash.	HCl Insol. Ash.
10015	G. F. Mowrer.....	New Castle.....	13.71	4.36
10042	F. E. Wills.....	Cambridge City.....	14.24	3.03

PRECIPITATED SULPHUR.

Four of the five precipitated sulphurs analyzed were illegal and consisted of a mixture of calcium sulphate and sulphur. There seems to have been but little improvement made in the character of this article since the first report.

PRECIPITATED SULPHUR—LEGAL.

Lab. No.	Name.	Address.	Per Cent. Sulphur.	Per Cent. U. S. P.
12542	Chickasaw Pharmacy.....	Peru.....	100.0	100.0

PRECIPITATED SULPHUR—ILLEGAL.

Lab. No.	Name.	Address.	Per Cent. Sulphur.	Per Cent. Impurities.	Per Cent. U. S. P.
79910	P. D. Brown.....	Knightstown.....	58.8	51.1	58.8
79918	J. T. Butler.....	Knightstown.....	50.5	49.4	50.5
79825	A. C. Fouche.....	Knightstown.....	53.2	46.7	53.2
10948	S. Herr.....	Brasil.....	53.9	46.0	53.9

QUININE SULPHATE.

Seven samples were analyzed during the last year, all of which were pure.

QUININE SULPHATE—LEGAL.

Lab. No.	Name.	Address.	Result.
9862	A. C. Pilkenton	Greenfield.....	U. S. P.
9884	W. S. Pugh.....	Greenfield.....	U. S. P.
9885	W. S. Early.....	Greenfield.....	U. S. P.
9912	M. Reeves.....	Knightstown.....	U. S. P.
10005	Wm. N. Pence.....	New Castle.....	U. S. P.
10017	G. F. Mowrer.....	New Castle.....	U. S. P.
10022	L. E. Kinsey.....	New Castle.....	U. S. P.

SPIRIT OF CAMPHOR. (*Spiritus Camphorae.*)

One hundred and seventy-six samples of spirit of camphor were analyzed during the year, 131, or 74.4 per cent, of which were below the U. S. P. requirements. An examination of the table of illegal camphor reveals the fact that in almost every instance the goods are only slightly below strength. The uniform low grade of this preparation seems to demand an explanation, which we believe is due to the common practice of the druggist, who, when making up the spirit, adds the required 100 grams of camphor gum to a liter of alcohol instead of dissolving the gum in alcohol and making up the volume to one liter. That this explanation is correct is shown by the following table of results obtained by the analysis of ten samples of spirit of camphor purchased on the open market, all of which were found to be below strength. Samples of gum were then purchased from the same druggists and made up at the laboratory, and in every instance the laboratory preparation was up to U. S. P. requirements, and further inquiry showed that the druggist had made the mistake of dissolving the gum in the total volume of alcohol instead of making up the finished product to the volume required.

The table gives the polariscope readings of the spirit at 20° C. The laboratory samples were made up differently, one set as suggested in the methods of the U. S. P. and the other by dissolving the camphor gum in alcohol and making up to volume without filtering, thus avoiding any possible loss of gum by sublimation.

SPIRIT OF CAMPHOR.

POLARISCOPE READINGS.

Number.	Druggists' Sample.	Laboratory Samples.	
		U. S. P. Method.	Not U. S. P. Method.
1.....	9.4	11.9	11.9
2.....	10.5	11.9	11.9
3.....	10.8	11.9	11.9
4.....	10.4	11.9	11.9
5.....	8.7	11.9	11.9
6.....	9.8	.....	11.9
7.....	10.5	.....	11.9
8.....	10.5	11.9	11.9
9.....	11.1	11.9	11.9
10.....	10.6	11.8	11.8

SPIRIT CAMPHOR—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol Volume at 20° C.	Per Cent. U. S. P.
10265	W. G. Sims.....	Swayzee.....	8325	82.5	112.5
10272	P. R. McLeod.....	Summitville.....	8387	79.2	108.3
10485	A. H. Fehring.....	Columbus.....	8313	88.4	109.1
10496	T. F. Noblett.....	Columbus.....	8400	78.8	165.8
10518	Geo. W. Dalton.....	Coal City.....	8352	80.7	115.0
10960	F. V. Stucky.....	Gosport.....	8300	83.6	103.3
11085	Sent in from.....	Martinsville.....	.....	.....	109.8
11093	H. M. Holmes.....	Columbus.....	.....	.....	113.3
11098	Jackson Drug Co.....	Angola.....	.....	.....	113.3
11010	H. E. Kratz.....	Angola.....	.....	.....	115.8
11210	Wm. J. Hamilton.....	Linton.....	8255	84.0	106.6
11211	Theo. B. Shaffer & Co.....	Sullivan.....	8343	80.7	125.0
11227	Knopp & Son.....	Flora.....	8308	82.5	104.4
11330	A. T. Masters.....	Lebanon.....	8318	82.5	104.1
11353	Muts & Lynch.....	Edinburg.....	8305	82.5	116.6
11378	Homer Clossen.....	Logansport.....	8373	79.9	130.8
11426	Zahart & Flood.....	Laporte.....	8337	79.9	116.6
12135	F. P. Johnson & Co.....	Rushville.....	8345	82.9	103.3
12166	Julius A. Haag.....	Indianapolis.....	8382	82.9	100.0
12177	H. O. Atchinson.....	Indianapolis.....	8317	82.2	120.8
12179	Francis Pharmacy Co.....	Indianapolis.....	8323	82.2	110.8
12187	W. E. Axline.....	Noblesville.....	8295	82.9	115.0
12190	Gerter Bros.....	Noblesville.....	8267	83.6	109.0
12207	O. P. Winders.....	Arcadia.....	8780	65.7	103.3
12217	F. H. Carter.....	Indianapolis.....	8353	80.0	119.1
12228	L. Haag.....	Indianapolis.....	8317	82.5	101.6
12245	Robt. Blodau.....	Indianapolis.....	8320	76.9	104.1
12301	Vermilia Pharmacy.....	Bloomington.....	8325	80.4	110.8
12310	Bowles Bros.....	Bloomington.....	8315	81.1	102.5
12325	C. E. Franklin.....	Bedford.....	8292	82.5	103.3
12332	Beddoe & Christie.....	Bedford.....	8313	81.4	108.3
12336	J. P. Riley.....	Paoli.....	8357	80.0	100.0
12337	S. F. Teaford.....	Paoli.....	8355	80.0	118.3
12427	W. H. Peters.....	Madison.....	8332	81.5	113.3
12432	W. H. Rogers.....	Madison.....	8310	83.2	100.0
12441	Gibson & Riedel.....	Madison.....	8343	81.8	100.0
12451	Don Davis.....	North Vernon.....	8335	83.0	118.3
12456	J. L. Doggett.....	North Vernon.....	8297	81.1	105.0
12466	H. Brewer.....	Greenwood.....	8321	83.0	108.3
12475	Overman Pharmacy.....	Marion.....	8308	82.5	100.0
12480	A. W. Leedy.....	Marion.....	8318	81.1	104.1
12525	R. E. Murphy.....	Peru.....	8280	83.0	102.5
12532	Thiebaud & Co.....	Peru.....	8343	81.1	109.1
12616	B. F. Fendig.....	Rensselaer.....	8315	80.8	105.0
12623	W. D. Handley.....	Monon.....	8320	80.8	100.0

SPIRIT OF CAMPHOR—ILLEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol Volume at 20° C.	Per Cent. U. S. P.
10033	Ed Smith.....	New Castle.....	.8508	74.1	66.6
10248	W. B. Tooker.....	Upland.....	.8272	84.4	85.0
10257	Conall & Son.....	Van Buren.....	.8325	81.6	91.6
10259	Fred Drake.....	Van Buren.....	.8637	64.1	72.5
10258	Lawshe Drug Store.....	Swayzee.....	.8300	83.3	92.5
10278	Howard Bros.....	Summitville.....	.9208	47.0	60.8
10002	Shadel's Drug Store.....	Plymouth.....	.8277	84.4	72.5
10360	D. P. Campbell & Bro.....	Muncie.....	.8325	82.5	87.5
10405	Chas. E. Gregor.....	Brownstown.....	.8308	89.2	95.0
10480	J. W. Danhour.....	Clay City.....	.8327	88.4	95.0
10501	Ernest Stahlhuth.....	Columbus.....	.8328	88.4	97.5
10503	Houser & Updegraff.....	Columbus.....	.8306	83.6	88.3
10505	H. M. Holmes.....	Columbus.....	.8317	76.1	59.0
10512	Muts & Lynch.....	Edinburg.....	.8217	88.4	59.1
10448	J. S. Harris.....	Spencer.....	.8808	68.5	67.5
10655	Edgar Tarleton.....	Martinsville.....	.8707	85.5	95.0
10658	J. M. Carleton.....	Martinsville.....	.8704	88.4	81.6
10662	B. W. Bass & Son.....	Martinsville.....	.8638	74.9	90.8
10663	Roland Cress.....	Lyons.....	.8944	61.4	93.3
10905	J. B. and J. Hartre.....	North Manchester.....	.8945	60.3	80.0
10906	Chas. B. Gibben.....	North Manchester.....	.8293	84.4	62.5
10924	Padger & Green.....	Greencastle.....	.9629	83.6	85.0
10926	Julius C. Marsh.....	Danville.....	.8295	84.4	70.5
10932	John F. Neiger.....	Danville.....	.8213	87.3	45.0
10937	C. O. Haines.....	Danville.....	.8315	82.5	90.0
10945	Lingenfelter & Co.....	Danville.....	.8570	76.1	75.0
10943	W. L. Wilson.....	Danville.....	.8878	63.2	98.3
10990	Ashton Stamon.....	Auburn.....	.8285	85.5	83.3
10992	R. M. Phillips.....	Auburn.....	.9190	50.1	59.3
11005	Wysong Drug Co.....	Angola.....	.8343	82.5	88.3
11026	Jacob F. Scudder.....	Edwardsport.....	.9030	60.3	78.3
11041	Geo. W. Bass & Son.....	Mooreville.....	.8587	74.9	80.0
11048	J. J. Leslie & Son.....	Jasonville.....	.8323	82.5	89.0
11057	J. F. Danner & Son.....	Elnora.....	.8175	88.3	17.5
11079	Omar Cavens.....	Odon.....	.8260	84.7	76.6
11061	D. Gants & Son.....	Odon.....	.9155	52.9	26.6
11066	John H. Moore.....	Worthington.....	.8770	67.4	70.0
11213	D. A. Bruner.....	Sandburn.....	.8322	83.6	97.5
11226	Eiler & Crume.....	Flora.....	.8315	82.5	95.0
11229	Fred Armick.....	Camden.....	.8460	79.1	53.3
11238	Jones Bros.....	Fowler.....	.8321	81.8	95.8
11240	Sent in from.....	Edinburg.....	.8275	82.0	80.0
11291	W. G. Williams.....	Valparaiso.....	.9150	50.5	75.0
11295	Corner Drug Store.....	Valparaiso.....	.8238	86.2	55.0
9992	Poopes Drug Store.....	Plymouth.....	.8310	82.5	88.3
11321	Shelburne Bros.....	Zionsville.....	.8258	84.4	95.9
11325	Abner A. Garner.....	Lebanon.....	.8640	71.1	76.6
11326	Fred Combs.....	Lebanon.....	.8260	84.4	83.3
11327	Alfred B. Jones.....	Lebanon.....	.8380	78.1	84.1
11342	Geo. Coulson.....	Thorntown.....	.8287	83.6	94.1
11346	J. M. Fox.....	Lebanon.....	.8220	85.5	39.1
11349	Arnett McFeren.....	Independence.....	.8657	71.1	30.8
11350	A. M. Boor Estate.....	Veedsburg.....	.9233	49.4	27.5
11351	A. M. Boor Estate.....	Veedsburg.....	.8345	83.6	74.1
11352	Arthur A. Osborne.....	Thorntown.....	.8275	83.6	81.6
11366	W. A. Scheddell.....	Crown Point.....	.9018	52.2	72.5
11368	Dr. H. P. Schwartz.....	Crown Point.....	.9108	51.2	45.8
11371	Lee Turman.....	Logansport.....	.8338	81.8	79.1
11377	W. H. Porter.....	Logansport.....	.878	82.6	75.8
11380	Red Cross Pharmacy.....	Logansport.....	.8306	82.5	91.6
11383	J. M. Grigsby.....	Logansport.....	.8812	65.0	63.3
11454	Sent in from.....	Rochester.....	.8307	82.5	88.3
11535	White Drug Store.....	Wabash.....	.8265	84.7	90.8
11694	Sent in from.....	Zionsville.....	.8245	85.5	84.1
11898	Geo. T. Driscoll.....	Lafayette.....	.8270	85.5	79.1
11912	Miller Drug Co.....	Coalmount.....	.8675	71.1	70.0
11913	Horton Cassady.....	West Terre Haute.....	.9153	50.9	87.5
12122	Hargrove & Mullen.....	Rushville.....	.8325	82.9	87.5
12128	Thos. W. Lytle.....	Rushville.....	.8300	82.9	87.5
12130	Frank Walcott.....	Rushville.....	.8283	84.4	80.8
12138	Rob. Navin.....	Indianapolis.....	.8325	84.9	95.8
12141	Lou Stockman.....	Indianapolis.....	.8285	84.4	72.5
12146	Ed Stucky.....	Indianapolis.....	.8307	82.9	92.5
12153	Geo. Weber.....	Indianapolis.....	.8265	84.4	88.3
12156	Ed Fenger.....	Indianapolis.....	.8415	72.2	87.5

SPIRIT OF CAMPHOR—ILLEGAL—Continued.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol Volume at 20° C.	Per Cent. U. S. P.
12160	D. M. Maloney.....	Indianapolis.....	.8907	61.4	59.3
12162	J. J. Keene.....	Indianapolis.....	.8283	82.9	86.6
12164	Ed Ferger.....	Indianapolis.....	.9610	72.9	87.5
12165	Edgar H. Wilson.....	Indianapolis.....	.8347	81.1	90.1
12170	Waddell & Walkerhouse.....	Indianapolis.....	.8565	74.7	87.5
12174	W. H. Burget.....	Indianapolis.....	.8287	82.9	81.6
12192	Chas. Mitchell.....	Noblesville.....	.8205	83.6	80.1
12195	A. G. Baldwin.....	Noblesville.....	.8287	83.3	79.1
12198	Frank E. Ross.....	Noblesville.....	.8670	69.6	92.5
12200	J. C. Scott.....	Atlanta.....	.8278	84.4	80.0
12203	T. E. Morris.....	Atlanta.....	.8313	82.9	82.5
12209	Sent in from.....	Arcadia.....	.9433	38.0	24.1
12341	Boyd & Knox.....	Paoli.....	.8250	84.4	25.0
12314	T. W. Hollenbeck.....	Indianapolis.....	.8267	82.9	72.5
12222	J. C. Mead.....	Indianapolis.....	.8292	82.9	90.0
12234	H. D. Bassett.....	Indianapolis.....	.8287	83.6	87.5
12231	J. C. Clark.....	Indianapolis.....	.8285	83.6	78.3
12238	Wm. Birk.....	Indianapolis.....	.9415	71.4	75.0
12240	A. M. Kyster.....	Indianapolis.....	.8293	83.6	81.6
12247	J. F. McKee.....	Indianapolis.....	.9457	81.8	92.5
12250	J. A. Conkey.....	Indianapolis.....	.8283	82.9	95.8
12254	C. T. Bedford.....	Indianapolis.....	.8283	82.9	95.8
12258	Gus Ferger.....	Indianapolis.....	.8298	82.5	93.3
12262	I. N. Helms.....	Indianapolis.....	.8506	81.8	87.5
12269	A. Bowen.....	Indianapolis.....	.8318	90.7	79.1
12273	J. A. Haag.....	Indianapolis.....	.8372	81.8	87.5
12276	E. H. Wilson.....	Indianapolis.....	.8343	80.7	96.6
12284	Carnegie Bros.....	Indianapolis.....	.8313	81.1	96.6
12288	L. B. King.....	Indianapolis.....	.8273	83.3	77.5
12297	H. H. Jefferies.....	Bloomington.....	.8303	81.1	97.5
12306	Wood Wiles.....	Bloomington.....	.8303	81.4	93.3
12307	John O'Harrow.....	Bloomington.....	.8322	82.5	80.8
12315	C. O. Mapes.....	Bloomington.....	.8228	83.6	92.5
12318	T. J. Penrod.....	Bloomington.....	.8258	83.6	87.5
12319	Dodd & Douthitt.....	Bedford.....	.8350	90.7	85.0
12328	Amstia & Son.....	Bedford.....	.8320	81.4	76.6
12360	Walker Allen.....	Greencastle.....	.8273	90.8	88.3
12422	W. G. Haberhart.....	Madison.....	.8325	82.5	90.8
12437	J. E. C. P. Harper & Co.....	Madison.....	.8285	84.0	95.0
12444	Jas. Harpan, Jr.....	Madison.....	.8287	85.5	68.3
12448	J. M. Dills.....	North Vernon.....	.8309	83.0	83.3
12472	Bradley Bros.....	Marion.....	.8382	83.5	68.3
12485	W. M. Hildebrand.....	Marion.....	.9433	79.2	83.3
12488	J. A. Thomas.....	Marion.....	.8735	68.5	56.6
12490	Freel & Mason.....	Marion.....	.8278	83.2	91.0
12494	John Davis.....	Marion.....	.8888	62.2	72.5
12497	R. L. Lander.....	Marion.....	.8295	83.2	60.0
12528	W. Haymaker.....	Peru.....	.8315	81.8	91.6
12534	Blue Drug Store.....	Peru.....	.8317	83.0	95.8
12539	Chickasaw Pharmacy.....	Peru.....	.8291	83.6	81.6
12545	S. F. Porter.....	Peru.....	.8317	80.8	92.5
12572	Sent in from.....	Indianapolis.....	.8312	83.0	96.6
12607	J. A. Larsh.....	Rensselaer.....	.8572	72.2	75.8
12729	Sent in from.....	Indianapolis.....	.8317	79.8	93.2
12749	King's Drug Store.....	Indianapolis.....	.8328	79.4	93.2
12807	Sent in from.....	Lebanon.....	.8323	81.8	93.2

SPIRIT OF TURPENTINE.

Four of the five samples of spirit of turpentine analyzed were legal. One sample contained 70 per cent of petroleum oil.

SPIRIT OF TURPENTINE—LEGAL.

Lab. No.	Name.	Address.	Specific Grav- ity at 20° C.	Butyro at 20° C.	Refract. Index at 20° C.	Iodine Value.	Boiling Point.	Pronine Add. Value.	Soluble in 3 Volumes Al- cohol.
9920	J. T. Butler.....	Knightstown.....	.8664	.....	1.4707	338.3	155°C.	.....	Yes.
10028	L. E. Kinsey & Co.	New Castle.....	.8673	66.9	1.4703	.....	157°C.	.....	Yes.
11009	Jackson Drug Co.	Angola.....	.8695	64.0	1.4685	.....	158°C.	203.5	Yes.
12708	Roosa & Radcliff.....	Peru.....	.8655	68.1	1.4711	.....	158°C.	.....	Yes.

SPIRIT OF TURPENTINE—ILLEGAL.

Lab. No.	Name.	Address.	Specific Grav- ity at 20° C.	Butyro at 20° C.	Refract. Index at 20° C.	Iodine Value.	Boiling Point.	Soluble in 3 Volumes Al- cohol.	Per Cent. Petroleum.
9935	Sent in from.....	Yorktown.....	.8247	.....	1.4521	118.0	150°C.	No.	70

SWEET SPIRIT OF NITRE.

No sample of sweet spirit of nitre was found which contained the amount of ethyl nitrite required. In one instance the spirit contained but a trace of nitrite. The low grade of this preparation is undoubtedly due to the fact that it readily decomposes.

SWEET SPIRIT OF NITRE—ILLEGAL.

Lab. No.	Name.	Address.	Ethyl Nitrite.	Per Cent. U. S. P.
7215	Maurice Schwartz.....	Indianapolis.....	1.77	44.2
7608	C. H. Overman.....	Marion.....	2.22	55.5
7619	Hildebrand & Ansley.....	Marion.....	2.48	59.6
10032	Ed Smith.....	New Castle.....	1.76	44.0
10052	Sent in from.....	Ladoga.....	3.28	82.0
11270	H. Tepe.....	Evansville.....	2.90	72.5
11372	Lee Truman.....	Logansport.....	2.43	60.7
11376	W. H. Porter.....	Logansport.....	3.61	90.2
11379	Homer Closson.....	Logansport.....	0.01	0.3
11381	Red Cross Pharmacy.....	Logansport.....	1.60	40.0
11384	J. M. Grigsby.....	Logansport.....	2.23	55.7
11428	F. W. Meissner.....	Laporte.....	3.38	84.0
11429	T. H. B. Boyd.....	Laporte.....	2.39	59.7
11534	White Drug Store.....	Wabash.....	3.07	76.7
11537	W. E. Clark.....	Wabash.....	1.77	44.2

TINCTURE OF ARNICA. (*Tinctura Arnicae.*)

The two samples of tincture of arnica analyzed met the U. S. P. requirements.

TINCTURE OF ARNICA—LEGAL

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Ext. Grams Per 100 C. C.	Alcoholic Volume at 20° C.
10641	J. R. Layman.....	Spencer.....	.9593	3.19	39.0
10802	G. B. Gray.....	Worthington.....	.9490	3.46	45.5

TINCTURE OF CAPSICUM. (*Tinctura Capsici.*)

Of the 48 samples analyzed, 24 were pure and 24 illegal. The illegal samples were so classed because of several reasons. In some instances the extract content was very low; in other cases turmeric or coal tar dye were present which had evidently been added to the powdered drug to improve its appearance or mask its inferiority. In one instance both turmeric and coal tar dye were present. In some cases the amount of alcohol was below the required amount.

TINCTURE OF CAPSICUM—LEGAL

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcoholic Volume at 20° C.	Extract per 100 C. C.
9645	F. S. Leadbetter.....	Connersville.....	.8412	83.4	1.63
9686	E. W. Swadley.....	Wabash.....	.8405	83.6	1.71
9695	E. Gackenheimer.....	Wabash.....	.8410	83.1	2.15
9953	Carleton & Tilford.....	Martinsville.....	.8493	79.1	2.02
9955	Edgar Tarleton.....	Martinsville.....	.8475	81.4	1.77
9964	Carleton's Drug Store.....	Martinsville.....	.8393	84.1	1.34
10054	T. C. Bayse.....	Rockport.....	.8260	85.6	2.17
10091	Otto Kloepper.....	Michigan City.....	.8523	80.3	1.57
10092	E. W. Lindemann.....	Michigan City.....	.8418	82.4	3.21
10229	Sent in from.....	Indianapolis.....	.8177	89.6	1.81
10324	P. M. Shore.....	Rochester.....	.8210	89.4	1.11
10379	Weber Drug Co.....	Indianapolis.....	.8395	83.4	2.59
10380	Huder's Pharmacy.....	Indianapolis.....	.8382	85.1	2.57
10381	Francis Pharmacy.....	Indianapolis.....	.8390	83.6	2.52
10382	Birk's Pharmacy.....	Indianapolis.....	.8381	81.6	2.58
10402	John B. Burrell.....	Brownstown.....	.8188	89.6	1.17
10407	O. R. Emerson.....	Brownstown.....	.8210	88.5	1.85
10676	J. W. Meiser.....	Monticello.....	.8325	87.4	1.96
10758	John L. Cook.....	Goodland.....	.8347	83.0	2.29
11031	John G. Hart.....	Bicknell.....	.8523	80.1	1.05
11278	A. Woodruff.....	Ligonier.....	.8175	89.4	1.24
11317	W. W. Jones.....	Greencastle.....	.8163	90.7	3.62
11720	Sent in from.....	Terre Haute.....	.8195	89.6	1.84
12205	O. P. Winders.....	Arcadia.....	.8214	83.6	1.02
10623	Mary Eikenberry Weeks.....	Churubusco.....	.8525	79.4	1.21

TINCTURE OF CAPSICUM—ILLEGAL.

Lab. No.	Name.	Address.	Specific Grav- ity at 20° C.	Alcohol by Volume at 20° C.	Extract Grams Per 100 C. C.	Remarks.
12201	J. C. Scott.....	Atlanta.....	.9436	40.1	1.02	Low in extract and alcohol.
9684	R. E. Clark.....	Wabash.....	.8325	83.9	0.72	Extract too low.
9705	White Drug Store...	Wabash.....	.9423	82.4	1.59	Turnmeric color.
9716	Bradley Bros.....	Wabash.....	.8322	89.1	1.28	Dilute alcohol.
9857	J. M. Carleton.....	Martinsville...	.8351	85.6	0.86	Low extract.
9859	Roy Rignish.....	Martinsville...	.8745	72.7	2.56	Alcohol low.
10122	J. H. Clark & Son..	Princeton.....	.9139	60.1	3.35	Dilute alcohol, artificial color.
10134	F. J. Biggs.....	Princeton.....	.8187	90.3	0.78	Low extract. Color bad.
10126	H. G. May.....	Princeton.....	.8378	83.8	0.68	Low extract. Coal tar dye.
10143	Ed Shoptaugh.....	Princeton.....	.8720	71.8	2.94	Low in alcohol.
10147	Joe. S. Schaffer....	Poseyville.....	.8277	88.2	0.35	Extract very low, color bad.
10306	Geo. V. Davis.....	Rochester.....	.8960	63.5	1.95	Dilute alcohol.
10314	Alex. Ruh.....	Rochester.....	.8302	50.8	2.18	Dilute alcohol, coal tar dye.
10393	Feyer Pharmacy....	Indianapolis...	.8370	84.5	1.83	Turnmeric and coal tar colors.
10409	R. J. Stillwell.....	Brownstown...	.9205	55.5	1.99	Dilute alcohol.
10411	Samuel M. Smith....	Osgood.....	.9212	53.5	2.01	Dilute alcohol.
10510	Taylor & Roth.....	Edinburg.....	.8753	70.1	1.75	Low in alcohol.
10759	Conestable & Pierce.	Goodland.....	.9365	44.1	0.42	Low in extract and alcohol, coal tar dye.
11292	W. H. Williams.....	Valparaiso.....	.8323	82.4	0.34	Low extract, bad color.
11293	Ben S. Wallick.....	Valparaiso.....	.8263	80.1	0.97	Extract slightly low.
11294	Corner Drug Store...	Valparaiso.....	.8068	64.3	1.34	Low in alcohol.
11456	Seal in from.....	Rochester.....	.9237	.....	2.38	Dilute alcohol, coal tar dye.
12208	Rodenbeck & Son..	Arcadia.....	.8184	91.3	0.49	Nearly colorless.

TINCTURE OF IRON. (*Tinctura Ferri Chloridi*).

Nineteen of the 28 samples of ferric chloride analyzed were illegal. The results of this year's work indicates a percentage of adulteration considerably higher than that heretofore observed.

TINCTURE OF FERRIC CHLORIDE—LEGAL.

Lab. No.	Name.	Address.	Per Cent. Iron.	Alcohol Volume at 20° C.	Per Cent. U. S. P.
9687	R. W. Swadley.....	Wabash.....	4.95	56.6	108.1
9752	J. R. Miller.....	Rosedale.....	5.52	47.0	120.7
10618	W. L. Piper.....	Denver.....	5.55	45.9	121.1
10604	S. B. Gray.....	Worthington...	4.90	33.4	108.9
12366	Louis Schmidt.....	Spencer.....	.....	.....	108.6
12376	J. W. Danhour.....	Clay City.....	.....	.....	108.2
12390	D. B. Gray.....	Worthington...	.....	.....	107.1
12395	W. F. Crook.....	Worthington...	.....	.....	104.9
12402	Cooper & Son.....	Worthington...	.....	.....	108.2

TINCTURE OF FERRIC CHLORIDE—ILLEGAL.

Lab. No.	Name.	Address.	Per Cent. Iron.	Alcohol Volume at 20° C.	Specific Gravity at 20° C.	Per Cent. U. S. P.
9681	R. E. Clark.	Wabash.	4.45	66.4		97.2
9686	E. Gackenhimer.	Wabash.	4.37	56.6		95.6
9718	Bradley Bros.	Wabash.	4.32	65.7		94.5
9750	R. E. Eysleigh.	Bloomfield.	4.40	34.1		96.0
9824	N. M. Mandenhall.	Brazil.	3.27	66.4		71.5
9828	E. R. Stevens.	Newport.	4.47	68.4		97.8
9837	M. C. Van Dorn.	Covington.	3.87	37.7		84.7
10320	Sent in from.	Brazil.	3.37			71.5
10304	Miller & Keith.	Rochester.	4.23	42.1		92.2
10333	Chas. Mason.	Dugger.	4.03	67.5		87.8
10513	Pierre T. Jett.	Clay City.	3.00	67.5		65.5
10614	Craig & Boggs.	Churubusco.	3.55	63.6		77.5
10649	F. O. Stucky.	Gosport.	4.3	54.7	.9963	93.4
11455	Sent in from.	Rochester.	4.475			97.7
12374	W. C. Duncan.	Clay City.				98.5
12383	Sbertser Bros.	Bloomfield.				90.1
12399	Moore's Drug Store.	Worthington.				75.9
12574	Jett's Drug Store.	Clay City.				93.0
12751	Sent in from.	Clay City.	4.40	52.0	.9954	96.2

TINCTURE OF OPIUM. (*Tinctura Opii.*)

But two of the eight samples of tincture of opium contained sufficient morphine to meet the U. S. P. requirements.

TINCTURE OF OPIUM.

Lab. No.	Name.	Address.	Grams Morphine in 100 G.C.	Remarks.
7763	W. F. Peters.	Seymour.	1.460	Legal.
9230	John Weigthy.	Huntingburg.	1.279	Legal.
9000	E. H. Wilson.	Indianapolis.	0.778	Illegal.
9001	Chas. W. Eichrodt.	Indianapolis.	0.958	Illegal.
9219	Watson Drug Co.	Corydon.	0.704	Illegal.
9231	A. H. Miller, Jr.	Huntingburg.	1.161	Illegal.
9598	Morrison & Deppes.	Shelbyville.	1.007	Illegal.
9742	Reed & Batey.	Sullivan.	1.180	Illegal.

TINCTURE OF IODINE. (*Tinctura Iodi.*)

One hundred and ninety-six samples of tincture of iodine were analyzed during the year. Of this number 85, or 43.3 per cent, were found to meet the U. S. P. requirements. Most of the illegal samples were collected prior to June 1. Of the large number of samples collected during the month of June, but few were found to be below standard. It is probable that the work of the coming year will show a still greater improvement in the character of this well known and easily manufactured preparation. The only explanation for the low grade of many samples of tincture of iodine is that the druggists did not use a sufficient quantity of sublimed iodine. As shown elsewhere tincture of iodine does not lose strength, but on the contrary, constantly grows stronger as the alcohol evaporates.

TINCTURE OF IODINE—LEGAL.

Lab. No.	Name.	Address.	Per Cent. U. S. P.
9952	Tarleton & Tilford	Martinsville	114.4
9956	J. M. Carleton	Martinsville	101.6
9958	Roy Rigrish	Martinsville	112.6
9960	D. W. Rigrish	Martinsville	113.0
9993	Peoples Drug Store	Plymouth	100.5
10046	G. E. Calloway	Cambridge City	101.2
10090	O. Klepfer	Michigan City	105.6
10242	Rothinghouse Bros.	Gas City	102.3
10640	J. R. Layman	Spencer	103.4
10654	Edgar Tarleton	Martinsville	102.0
10657	J. M. Carleton	Martinsville	103.1
10788	Black & Cook	Terre Haute	102.3
10847	S. Herr	Brasil	112.6
11004	Wysong Drug Co.	Angola	116.6
11007	Jackson Drug Co.	Angola	100.6
11011	H. E. Krats	Angola	110.6
11043	Ashley R. Cooper & Son	Mooresville	110.4
11049	Chas. C. Williams	Jasonville	104.2
11066	Lafe Scott	Newberry	100.5
11087	Sent in from	Monticello	103.8
11212	D. A. Bryner	Sandborn	112.6
11322	Shelburn Bros.	Zionsville	100.0
11339	Bauna & Co.	Thornstown	126.2
11532	Geo. W. Rule	Goshen	108.6
11536	Bradley Bros.	Wabash	103.8
11897	Geo. T. Driscoll	Lafayette	100.0
12129	Frank Walcott	Rushville	119.6
12137	Rob Navin	Indianapolis	114.8
12148	Ed Stucky	Indianapolis	102.4
12151	Geo. Weber	Indianapolis	105.7
12155	Ed Ferger	Indianapolis	100.2
12167	Julius A. Haag	Indianapolis	105.6
12172	W. H. Burget	Indianapolis	102.0
12178	Francis Pharmacy Co.	Indianapolis	103.8
12189	Gerter Bros.	Noblesville	100.0
12191	Chas. Mitchell	Noblesville	126.2
12197	Frank E. Ross	Noblesville	100.0
12204	T. E. Morris	Atlanta	100.2
12212	I. W. Hollenbeck	Indianapolis	111.9
12216	F. H. Carter	Indianapolis	103.4
12219	Jas. C. Mead	Indianapolis	130.2
12223	H. D. Bassett	Indianapolis	101.6
12230	L. Haag	Indianapolis	123.3
12241	A. M. Eyster	Indianapolis	123.8
12257	Gus Ferger	Indianapolis	107.3
12261	I. N. Heims	Indianapolis	110.3
12265	Chas. Traub	Indianapolis	102.6
12272	J. Haag	Indianapolis	110.2
12275	E. H. Wilson	Indianapolis	103.3
12283	Carnefix Bros.	Indianapolis	103.3
12287	L. B. King	Indianapolis	101.6
12300	Vermylla Pharmacy	Bloomington	100.4
12304	Wood Wiles	Bloomington	103.2
12311	Bowles Bros.	Bloomington	112.6
12313	C. O. Mapes	Bloomington	102.2
12323	C. E. Franklin	Bedford	105.8
12330	Beddoe & Christie	Bedford	101.5
12334	J. P. Riley	Paoli	107.7
12338	S. F. Teaford	Paoli	110.8
12362	J. S. Harris	Spencer	116.4
12367	Louis Schmidt	Spencer	101.5
12377	J. W. Danbour	Clay City	103.1
12394	W. F. Cook	Worthington	103.3
12398	Moore's Drug Store	Worthington	106.8
12401	Cooper & Son	Worthington	112.4
12433	W. H. Rogers	Madison	110.0
12440	Gibson & Riedel	Madison	103.7
12443	James Hargan, Jr.	Madison	103.0
12449	J. M. Bills	North Vernon	103.3
12453	Don Davis	North Vernon	115.5
12454	J. D. Doggett	North Vernon	108.9
12467	H. Brewer	Greenwood	102.0
12478	Overman Pharmacy	Marion	105.3
12481	A. W. Leedy	Marion	102.6
12484	W. M. Hildebrand	Marion	121.2
12487	J. A. Thomas	Marion	100.9
12491	Freel & Mason	Marion	108.4
12523	R. E. Murphy	Peru	101.1

TINCTURE OF IODINE—LEGAL—Continued.

Lab. No.	Name	Address.	Per Cent. U. S. P.
12527	W. Hamaker.....	Peru.....	137.4
12536	Blue Drug Store.....	Peru.....	104.9
12538	Chickasaw Pharmacy.....	Peru.....	106.9
12544	S. F. Porter.....	Peru.....	103.6
12624	W. D. Handy.....	Monon.....	100.0
12755	Granger Drug Store.....	Indianapolis.....	100.5
13087	Jennings & Son.....	Brookston.....	100.5

TINCTURE OF IODINE—ILLEGAL.

Lab. No.	Name.	Address.	Per Cent. U. S. P.
9638	L. E. Green.....	Connersville.....	60.1
9641	O. Elliott.....	Connersville.....	86.2
9679	Sent in from.....	Franklin.....	92.4
9954	Edgar Tarleton.....	Martinsville.....	74.1
10001	Shadel's Drug Store.....	Plymouth.....	78.8
10003	J. W. Rinsard.....	Plymouth.....	97.9
10012	Beam & Lynn.....	New Castle.....	69.7
10072	Woodson & Willetts.....	Michigan City.....	92.8
10093	E. W. Lindemann.....	Michigan City.....	92.8
10121	J. H. Clark & Son.....	Princeton.....	65.3
10123	F. J. Biggs.....	Princeton.....	99.4
10125	H. G. May.....	Princeton.....	99.1
10142	Ed Shoptaugh.....	Princeton.....	92.8
10146	Joe. F. Schaffer.....	Poseyville.....	68.9
10277	Howard Bros.....	Summittville.....	83.6
10305	Miller & Keith.....	Rochester.....	89.8
10313	Alex. Ruh.....	Rochester.....	84.4
10325	E. M. Shore.....	Rochester.....	27.1
10329	Chas. Majors.....	Dugger.....	81.1
10239	I. L. Klingensmith.....	Gas City.....	78.5
10307	Geo. V. Davis.....	Rochester.....	91.7
10403	John B. Burrel.....	Brownstown.....	64.5
10404	Chas. E. Greger.....	Brownstown.....	80.3
10406	O. R. Emerson.....	Brownstown.....	88.4
10410	Samuel M. Smith.....	Osgood.....	80.3
10509	Taylor & Roth.....	Edinburg.....	86.6
10613	Craig & Boggs.....	Churubusco.....	74.4
10617	W. L. Piper.....	Denver.....	91.7
10643	Wm. Moss & Co.....	Spencer.....	37.7
10664	Jas. S. Simons.....	Lyons.....	76.6
10688	McConnell & Logan.....	Monticello.....	77.0
10690	Monticello Drug Co.....	Monticello.....	93.2
10724	J. W. Rinsard.....	Plymouth.....	93.9
10751	Dr. R. C. McCain.....	Kentland.....	91.7
10785	Rolland Cress.....	Lyons.....	86.2
10803	G. B. Gray.....	Worthington.....	78.1
10808	Thos. E. Rainer.....	Covington.....	81.1
10834	Jas. F. Lankford.....	Clay City.....	91.3
10855	Lee Thomas.....	Brazil.....	75.8
10907	Smith Drug Store.....	Winamac.....	52.7
10908	Mac Capper.....	Winamac.....	67.5
10989	Ashton Stamon.....	Auburn.....	93.4
10991	H. B. McCord.....	Auburn.....	85.5
10993	H. M. Phillips.....	Auburn.....	85.7
11006	Peoples Drug Store.....	Angola.....	46.5
11032	John G. Hart.....	Bicknell.....	68.2
11047	J. J. Lacy & Son.....	Jasonville.....	85.1
11042	Peoples Drug Store.....	Mooresville.....	68.6
11060	D. Gants & Son.....	Odon.....	79.6
11069	M. J. McIntosh.....	Midland.....	52.8
11070	W. L. Stay.....	Odon.....	84.7
11071	Odon Drug Co.....	Odon.....	48.0
11072	J. F. Danner & Son.....	Elmira.....	66.0
11231	P. W. VanGundy.....	Rockfield.....	64.5
11277	A. Woodruff.....	Ligonier.....	34.1
11279	S. T. Eldred.....	Ligonier.....	91.7
11300	Heinemann & Sievers.....	Valparaiso.....	83.1
11343	Geo. Coulson.....	Thorntown.....	66.7
11365	W. A. Shaddell.....	Crown Point.....	88.6
11367	Dr. H. P. Swartz.....	Crown Point.....	61.3
11427	Zahrt & Flood.....	Laporte.....	85.2

TINCTURE OF IODINE—ILLEGAL—Continued.

Lab. No.	Name.	Address.	Per Cent. U. S. P.
11457	Alex. Ruh.	Rochester.	85.2
11533	D. H. Hawks.	Cochran.	86.7
12121	Engrove & Mullen.	Rushville.	94.6
12125	Thos. W. Lytle.	Rushville.	97.9
12128	F. B. Johnson & Co.	Rushville.	96.2
12143	Lou Stockman.	Indianapolis.	97.2
12152	H. J. Huder.	Indianapolis.	96.5
12163	J. J. Keene.	Indianapolis.	80.3
12171	Waddell & Walterhouse.	Indianapolis.	85.0
12176	H. O. Atchinson.	Indianapolis.	83.2
12186	W. E. Axline.	Noblesville.	94.2
12194	A. G. Baldwin.	Noblesville.	95.2
12199	J. C. Scott.	Atlanta.	95.7
12206	O. P. Winders.	Aroonia.	78.5
12232	J. C. Clark.	Indianapolis.	89.5
12237	Wm. Birk.	Indianapolis.	96.5
12244	Robt. P. Blodau.	Indianapolis.	81.9
12246	J. F. McKee.	Indianapolis.	99.6
12249	J. A. Conkey.	Indianapolis.	43.8
12255	C. T. Bedford.	Indianapolis.	92.1
12279	J. M. Rhodes.	Indianapolis.	74.1
12309	J. W. O'Harrow.	Bloomington.	78.5
12317	T. J. Penrod.	Bloomington.	96.2
12370	O. E. Dunn.	Spencer.	92.8
12372	W. C. Duncan.	Clay City.	62.2
12380	P. T. Jett.	Clay City.	96.2
12384	Shertzer Bros.	Bloomfield.	92.8
12386	Bynum Bros.	Bloomfield.	37.4
12421	Sent in from.	Worthington.	221.6
12423	W. G. Heberhart.	Madison.	96.2
12426	W. H. Peters.	Madison.	50.6
12435	J. E. C. F. Harper & Co.	Madison.	96.9
12464	A. W. Owens.	Greenwood.	72.9
12473	Bradley Bros.	Marion.	82.6
12493	John Davis.	Marion.	85.0
12498	R. L. Lander.	Marion.	71.5
12530	Thiebaud & Co.	Peru.	97.2
12609	J. A. Larah.	Rensselaer.	65.6
12611	A. F. Long.	Rensselaer.	45.9
12613	B. F. Fendig.	Rensselaer.	96.9
12748	Rhodes Pharmacy.	Indianapolis.	90.6
12761	Sent in from.	Indianapolis.	97.4
12806	Sent in from.	Lebanon.	21.8
12914	Sent in from.	Clay City.	96.1
13123	Bradley Bros.	Wabash.	91.0
10622	Mary Eikenberry Weeks.	Churubusco.	45.4
12296	H. H. Jefferies.	Bloomington.	45.8
12320	Dodd & Douthitt.	Bedford.	29.6
12326	Austin & Son.	Bedford.	45.4
12339	Boyd & Knox.	Paoli.	62.8

WITCH HAZEL. (*Hamamelitis*.)

All of the six samples of witch hazel analyzed were pure. In no instance was formaldehyde present as a preservative, although it has heretofore been commonly used.

WITCH HAZEL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol Volume at 20° C.	Formaldehyde
9693	E. W. Swadley.	Wabash.	.9805	13.4	—
9701	E. Gackenheimer.	Wabash.	.9805	13.4	—
9711	K. Bockman.	Wabash.	.9807	13.1	—
9720	Bradley Bros.	Wabash.	.9790	14.8	—
12706	J. D. Hedrie.	Peru.	—	12.4	—
12802	Granger Drug Store.	Indianapolis.	.9811	12.4	—

MISCELLANEOUS DRUG ANALYSES.

In many cases but few samples of an article have been sent in and the results of the analyses are tabulated as below without discussion for the sake of analytical data which possesses considerable value in showing the chemical limits of legal and illegal goods.

ALCOHOL

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol by Volume at 20° C.
11729	Sent in from	Camden.....	.8165	93.1
12756	Sent in from	Indianapolis.....	.8170	92.9
11908	Sent in from	Logansport.....	.8155	93.4

ALMOND OIL—LEGAL.

Lab. No.	Name.	Address.	Butyro at 20° C.	Specific Gravity at 20° C.	Specific Gravity at 25° C.
9879	W. S. Pugh.....	Greenfield.....	71.4	.....	.9285
10645	Fred Keller.....	Brasil.....	70.2	.9185	.9153
10921	Badger & Green.....	Greencastle.....	71.2	.9195	.9168

BAY RUM—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol By Volume at 20° C.
10249	W. B. Teeter.....	Upland.....	.9343	47.6
10253	T. M. Smith.....	Upland.....	.9136	57.2
10255	Conwell & Son.....	Van Buren.....	.9390	45.0
10275	P. R. McLeod.....	Summitville.....	.9348	47.3
10276	Howard Bros.....	Summitville.....	.9400	44.5

BAY RUM—ILLEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Alcohol By Volume at 20° C.	Per Cent. Methyl Alcohol.
10200	Fred Drake.....	Van Buren.....	.9296	50.0	50.0

BEESWAX (WHITE)—ILLEGAL.

Lab. No.	Name.	Address.	Butyro at 65° C.	Melting Point.	Per Cent. Beeswax.	Per Cent. U. S. P.
9864	A. C. Filkenton.....	Greenfield.....	15.6	56.0	5.0	5.
10271	Lawabe Drug Store.....	Swayzee.....	15.0	53.0	0.0	0.0
10482	A. H. Fehring.....	Columbus.....	15.5	53.0	5.0	5.

BORAX—LEGAL.

Lab. No.	Name.	Address.	Remarks.
9866	A. C. Pilkenton.....	Greenfield.....	U. S. P.
9883	W. S. Pugh.....	Greenfield.....	U. S. P.

CINNAMON OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Polarization.	Per Cent. Cinnamic Aldehyde.
9871	M. C. Quigley.....	Greenfield.....	1.0612	+ 14.0	77.6
9899	V. L. Early.....	Greenfield.....	1.0615	+ 2.2	80.0

CEDAR OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Butyro at 20° C.	Polarization 100 M. M. Tube.	Soluble Volume 90 Per Cent. Alcohol.
10905	Wood Wiles.....	Bloomington.....	.8825	67.2	+ 22.8	5
11332	Waneborough & Akerman.....	Lebanon.....	.9078	67.6	+ 3.4	5

COD LIVER OIL—LEGAL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Butyro at 20° C.	Saponification Value.	Iodine Value.	Remarks.
9637	L. E. Green.....	Connersville.....	.9205	79.3	183.5	152.1	Answers U. S. P. requirements. ¹
9874	M. C. Quigley.....	Greenfield.....	.9195	79.2	176.9	150.7	Answers U. S. P. requirements. ¹

¹The U. S. P. color reaction for other fish oils positive in both samples.

MISCELLANEOUS DRUGS AND CHEMICALS.

Lab. No.	Article.	Name and Address of Manufacturer or Dealer.	Remarks.
10019	Gum camphor.....	H. F. Mowrer, New Castle.....	U. S. P.
10296	Calomel, powders.....	Sent in from Valleeene.....	¹ HgCl ₂ 17.4%, NaHCO ₃ 79.1%, moisture 3.4%.
10377	Lime.....	Eli Lilly & Co., Indianapolis.....	² O. K.
10378	Compressed lime tablets.....	John Wyeth & Bro., Philadelphia.....	O. K. Lime water from tablets = 103.6%.
10596	$\frac{1}{2}$ Gr. codeine sul. tab.....	Sent in from Hamlet.....	Codeine present. No morphine.
10742	Zinc sulphate.....	H. E. Zimmer, Indianapolis.....	U. S. P. except excess chloride.
10743	Fot. chlorate.....	H. E. Zimmer, Indianapolis.....	U. S. P.
10744	Sugar of lead.....	H. E. Zimmer, Indianapolis.....	U. S. P. except had effloresced.
11083	Peroxide of hydrogen.....	Sent in from Indianapolis.....	H ₂ O ₂ 2.5%. Excess acid.
11205	Toilet preparation.....	Sent in from Hymers.....	Mercuric chloride present.
11208	Quinine sulphate.....	Pierson's Cut Price Drug Store, Indianapolis.....	U. S. P.
11301	Powdered capsicum.....	Heinemann & Sievers, Valparaiso.....	Pure
11307	Sodium salicylate.....	Toledo Pharmaceutical Co., Toledo, Ohio.....	Sodium salicylate 78.4; below standard.
11563	Quinine capsules, 3-gr.....	Sent in from Indianapolis.....	³ No calomel present.
11807	Boric acid.....	Sent in.....	Boric acid 96.8; very dirty.
11994	Damask rose color paste.....	Jos. Burnett Co., Chicago.....	Amaranth red No. 107; legal.
12912	Borax.....	Sent in from Indianapolis.....	Found to be potassium chlorate.

¹Each powder contains 1.26 grains of calomel.

²Lime water made from this lime equals 121.5% U. S. P.

³These capsules were suspected of containing calomel.

ROCHELLE SALTS.

Lab. No.	Name.	Address.	Per Cent. U. S. P.
9913	N. Reeves.....	Knightstown.....	94.7
10009	Beam & Lynn.....	New Castle.....	95.8
10016	G. F. Mowrer.....	New Castle.....	95.0

SOLUTION FERRIC CHLORIDE—LEGAL.

Lab.	Name.	Address.	Per Cent. Iron.	Per Cent. U. S. P.
10229	Mendenhall Pharmacy.....	Brazil.....	9.85	98.5
10544	Laboratory.....	Indianapolis.....	11.2	112.0

TINCTURE GINGER.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Extract per 100 C. C.	Alcoholic Volume at 20° C.	Remarks.
9593	Schroeder & Hoops.....	Shelbyville.....	.8287	0.68	82.4	Low solids.
10035	Ed Smith.....	New Castle.....	.8223	0.90	89.5	Low solids.
11316	W. W. Jones.....	Greencastle.....	.8235	1.26	86.8	Legal.
12739	Salinger Bros.....	Goshen.....		3.40	6.2	Illegal. ¹

¹Acetic acid, .682 grams per 100 C. C. Not a U. S. P. product.

TINCTURES—MISCELLANEOUS.

Lab. No.	Name of Tincture.	Name and Address of Manufacturer or Dealer.	Specific Gravity at 20° C.	Alcoholic Volume at 20° C.	Extract Grams per 100 C. C.	Remarks.
10709	Tr. capicum 5%...	Sent in from Indianapolis.....			0.62	Natural color.
10708	Tr. capicum 5%...	Sent in from Indianapolis.....			0.69	Natural color.
10710	Fl. Ext. capicum...	Sent in from Indianapolis.....				Natural color.
10712	Fl. Ext. capicum...	Sent in from Indianapolis.....				Natural color.
9210	Aromatic spirits ammonia.....	Chas. Coonley, South Bend.....	8985			Legal.
9224	Tr. asafoetida.....	L. A. Riley & Son, Corydon.....	8292	87.9	3.06	Legal.
9592	Tr. cubeb.....	Schraeder & Hoop, Shelbyville.....	8335	83.9	3.24	Legal.
9961	Tr. gentian.....	G. W. Rigrish, Martinsville.....	9483	49.1	6.68	Legal.
9963	Fl. Ext. Jamaica ginger.....	Sharpe & Dohme, Baltimore.....			3.57	Illegal.
11265	Tr. quassia.....	Henry Tepe, Evansville.....	9505	36.4	0.542	Legal.
11267	Tr. myrrh.....	Henry Tepe, Evansville.....	8363	84.7	5.20	Legal.
11268	Tr. lemon.....	Henry Tepe, Evansville.....	8963	57.7		¹ Lemon oil 0.50%.
11574	Essence ginger.....	H. W. Jones, Muncie.....	9613	41.1	5.155	Caramel color.
11575	Ess. wintergreen.....	H. H. Jones, Muncie.....	9142	37.0		Illegal.
11615	Fl. Ext. opium (camphorated)...	Allaire Woodward Co., Peoria, Ill.....				² Oil wintergreen 1.3%.
						³ Sample too small.

¹This sample is tincture of lemon peel. Mislabeled.

²Pure essence of wintergreen but highly colored red.

³Qualitative test shows presence of all required ingredients.

WINTERGREEN OIL.

Lab. No.	Name.	Address.	Specific Gravity at 20° C.	Polarisation 100 M. M. Tube.	Natural or Synthetic.	Remarks.
9370	M. C. Quigley	Greenfield.	1.179	-0.5	Natural.	Legal.
9390	V. L. Early	Greenfield.	1.179	-0.0	Synthetic.	Legal; Properly labeled.
9381	W. S. Pugh	Greenfield.	1.179	-0.0	Synthetic.	Illegal; not properly labeled.

RESULT OF ANALYSES OF DRUG SAMPLES.

ARTICLES EXAMINED.	Good.	Bad.	Total.	Per Cent. Adulterated.
Alcohol.....	3	0	3	0.0
Almond oil.....	3	0	3	0.0
Aqua ammonia.....	50	63	113	55.7
Bay rum.....	5	1	6	16.6
Beeswax, yellow.....	11	2	13	15.3
Beeswax, white.....	0	3	3	100.0
Borax.....	2	0	2	0.0
Castor oil.....	10	0	10	0.0
Cedar oil.....	2	0	2	0.0
Cinnamon oil.....	2	0	2	0.0
Cod Liver oil.....	2	0	2	0.0
Compound licorice powder.....	9	2	11	18.1
Essence peppermint.....	4	4	8	50.0
Glycerine.....	6	0	6	0.0
Lemon oil.....	4	1	5	20.0
Lime water.....	64	11	75	14.6
Linseed oil.....	3	1	4	25.0
Olive oil.....	29	0	29	0.0
Paregoric.....	15	0	15	0.0
Patent medicines.....			30	
Potassium cyanide.....	5	7	12	58.3
Powdered senna leaves.....	2	0	2	0.0
Precipitated sulphur.....	1	4	5	80.0
Quinine sulphate.....	7	0	7	0.0
Rochelle salts.....	3	0	3	0.0
Solution ferric chloride.....	2	0	2	0.0
Spirit of camphor.....	45	131	176	74.4
Spirit of turpentine.....	4	1	5	20.0
Sweet spirit of nitre.....	0	15	15	100.0
Tincture of arnica.....	2	0	2	0.0
Tincture of capsicum.....	24	24	48	50.0
Tincture of ginger.....	1	3	4	75.0
Tincture of iodine.....	85	111	196	56.6
Tincture of iron.....	9	19	28	67.8
Tincture of opium.....	2	6	8	73.3
Tincture miscellaneous.....	14	1	15	6.6
Wintergreen oil.....	2	1	3	33.3
Witch Hazel.....	6	0	6	0.0
Miscellaneous drugs and chemicals.....	14	3	17	17.6
Miscellaneous articles.....			9	
Total.....	452	414	905	47.7

Report from Water Laboratory.

THE WATER SUPPLY OF INDIANA.

During the year ending September 30, 1908, 918 samples of water were analyzed; 288 samples were deep well waters, the water coming from below an impervious stratum; 419 samples were from shallow wells and were supposedly surface waters; 36 samples were from ponds or lakes; 47 from springs; 33 from streams, and 27 from cisterns. In addition to these analyses, 68 miscellaneous samples were analyzed. This number included samples of sewage from state institutions, polluted river waters sent in by the Fish Commission, samples from Lake Michigan and other water supplies which were being investigated and which are elsewhere reported.

Of the deep well supplies, 220 were of good quality; 47 were so polluted as to be classed as bad, and 21 were of doubtful quality—that is, they contained certain chemical characteristics indicating pollution, although at the present time their condition is not so serious that they are unfit for use. Of the 419 shallow wells examined, 166 were of good quality; 209 unqualifiedly bad; and 44 supplies of doubtful quality. Since a shallow well water of doubtful quality is sooner or later to become more seriously polluted and pass into the class of bad waters, doubtful and bad samples may be placed together. We find, then, that 253, or 60.4 per cent, of the drinking waters from shallow wells must be classed as unsatisfactory. Twenty-five stream supplies were good, 7 bad and 1 doubtful. Thirty-six pond or lake supplies were examined. Twenty-four samples were of good quality, 5 were bad and 7 were receiving pollution, but not in sufficient quantities to warrant their condemnation. Of the 47 spring waters analyzed, 37 were of good quality, 1 was grossly polluted and 9 were doubtful. It is evident that many waters sent in as spring supplies are in fact only surface waters, since they possess none of the characteristics of a true spring water. Of the 27 cistern waters analyzed, 14 were of good quality, while 13 were polluted. Cistern water, which is in most instances rain water, when collected from clean roofs in water-tight, clean, underground tanks, should be entirely satisfactory for drinking and domestic purposes. The results of the work of the laboratory show, however, that almost 50 per cent of the cistern waters examined were not

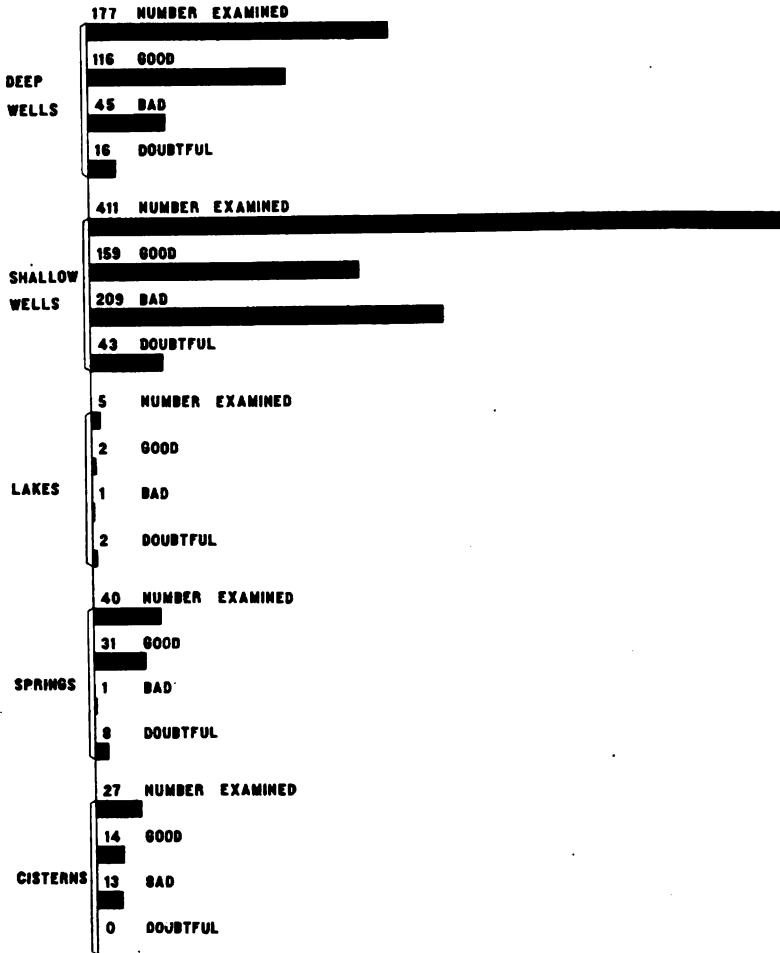
potable. This is usually due to the fact that the cistern is located in the back yard near the privy vault, is leaking, and admits polluted water from the outside whenever the water level in the cistern is lower than the ground-water level of the soil.

Another classification may be made of the work according to the ownership of the sources of supply. One hundred and ninety analyses were made of water from public supplies classified as follows: 111 deep wells, 8 shallow wells, 33 streams, 31 ponds or lakes, and 7 springs. Of the deep well supplies, 104 were of good quality, 2 were bad and 5 were doubtful. The deep well waters used as public supplies are for the most part of excellent quality from a sanitary standpoint. If the ground-water level were not rapidly decreasing in every part of the State the deep well supply could be depended upon to furnish public waters, but in view of the fact that many cities depending upon this source of supply have during the year experienced water famines, the deep well can no longer be viewed as the most satisfactory supply. Of the 33 river supplies, 22 were of good quality, 7 were bad and 1 was doubtful. Several of these samples came from the Ohio river, a supply which in an unfiltered condition can never be depended upon to furnish potable water. Of the private supplies, 177 were deep wells, 411 shallow wells, 5 ponds, 40 springs and 27 cisterns. One hundred and sixteen of the deep well waters were of good quality, 45 were bad and 16 doubtful. But 159 of the 411 shallow well waters were potable, 209 were unequivocally bad and 43 were of doubtful quality. The shallow well is never a satisfactory source of water supply, and except in rare instances, when it is located far distant from any possible source of pollution, should never be used until a thorough analysis has shown it to be uncontaminated by human filth. The continued use of shallow wells by city and town dwellers is a reproach upon our intelligence. The use of such wells should be forbidden by city authorities, and connection with the mains of public water supplies forced, if need be. It is as necessary to protect the people from the scourge of typhoid fever as to protect their homes from fire or their property from the thief.

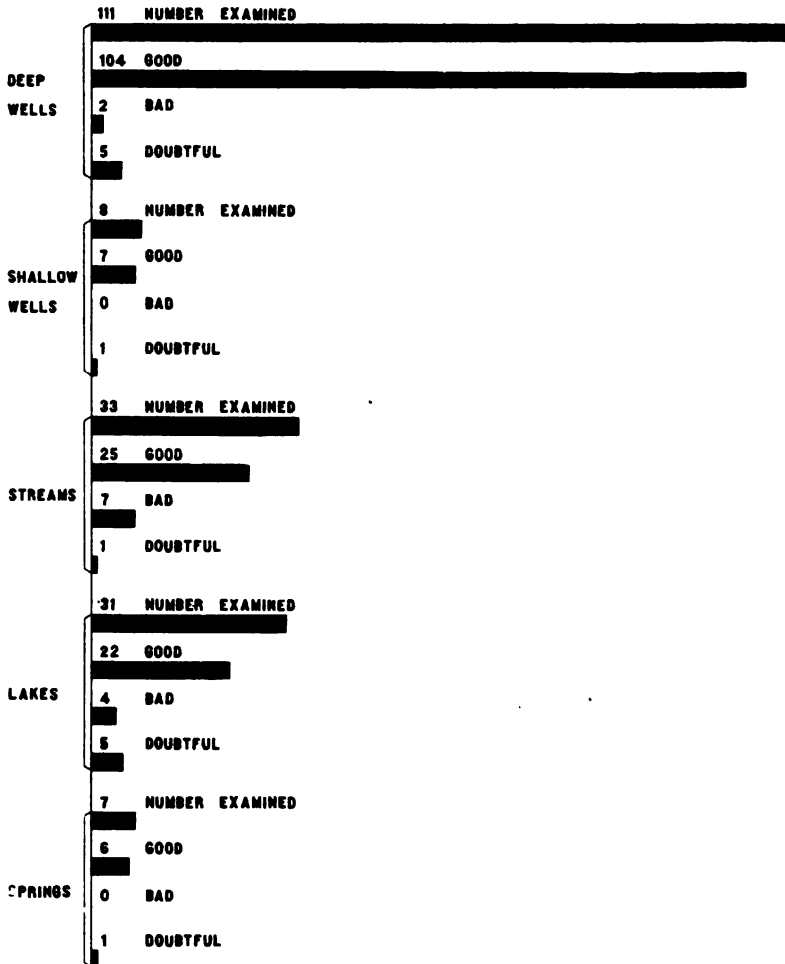
During the year, a water laboratory has been established for the purpose of giving assistance to cities where the public water supply is unsatisfactory or inadequate. Several extensive investigations of filtration plants and polluted water supplies were made during the year and the results are incorporated as a part of this report.

CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA

1908



CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA 1908



STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND., December 18, 1907.

E. L. Loomis, Supt. Valparaiso Home Water Co., Valparaiso, Ind.:

Dear Sir—Enclosed please find the report of the efficiency test of the filtration plant recently installed by your company, as rendered by J. Herbert Brewster, water engineer and analyst to this department of the State Board of Health. The report includes a description of the plant, suggestions as to its proper handling, references to mechanical defects, and the results of the bacteriological analyses of both raw and filtered water. It also includes all the sanitary chemical analyses made of the water during a period of two years. In addition to the report of Mr. Brewster the following general report is appended:

The water supply of the city of Valparaiso is obtained from Flint Lake, a body of water two square miles in area. The lake has a muddy bottom and is surrounded in part by low lying marsh land. Other portions of the shore line are elevated some feet above low water mark. The country around Flint Lake is nearly level, the watershed being limited to a few square miles. The lake is, however, one of a series of lakes, all of which are connected during high water. Through the summer months the channel between Flint Lake and the upper lakes is cut off by a dam, thus effectually preventing the ingress of water from the upper lakes. During the winter and at periods of high water the dam is not sufficiently high to shut off the run-off of the upper lakes, and when this condition prevails the water supply consists of the run-off of all the country draining into the series of lakes.

The watershed, except as hereafter noted, is entirely agricultural land and is subject to pollution only by the usual conditions obtaining about farm-houses. All barnyard drainage, waste water from houses and seepage from vaults and cesspools located on the watershed must eventually find its way to the lake. A portion of the watershed is wooded, and the natural beauty of the highlands bordering on Flint Lake has induced many summer visitors to build cottages along the shore. These cottages and the annual influx of summer residents constitute the most important source of contamination of the waters of the lake. While most of the cottagers are aware of the importance of observing rigid sanitary rules for the disposal of household wastes, offal and bodily excrements, yet the constant presence of numbers of people living on the shores and watershed in close proximity to the water, fishing and possibly bathing in the waters of the lake, precludes the assumption that the water will not be injuriously affected. All rules of hygiene require bodies of water used as a source of drinking water to be protected against the possibility of pollution. This means an *uninhabited watershed*. Such a condition seems to be unobtainable at Flint Lake. As the water company supplying the city must continue to deliver water from the lake to the city of Valparaiso, since it is impossible to protect the lake from pollution in the first instance, it has installed a filter plant to render the water safe in case it ever should receive injurious polluting material. Many sanitary engineers contend that this mode of operation is more feasible and less expensive than conserving the original purity of the water. The results obtained must always depend on two factors: the character of the raw water and the efficiency of the filtering operations. The water of

Flint Lake is sanitarily well adapted for filtration, although from a mechanical standpoint it contains too little sediment to make easy coagulation possible. It is but rarely turbid, the organic content is low and the color and odor are quite satisfactory from an aesthetic standpoint. The filtration system installed at Valparaiso is based upon the use of a coagulant which collects all suspended matter, both organic and mineral, and at the same time the bacteria, algae and infusoria. When in efficient operation this method of treatment will remove all suspended matter, abstract practically all color due to organic decomposition and take out 98 per cent of the bacteria present. Such purification renders the ordinary water quite safe and potable, and water of the type obtained from Flint Lake should be of unquestionable quality.

The efficiency of the filtration depends on several factors: the character of the coagulant and the quantity used, the character of the raw water, which may vary from day to day, the rapidity with which it is run through the filters, the thoroughness with which the beds are washed, the condition of the beds, etc. Unless these conditions are well understood and under perfect control, the effluent from the filter beds may be simply strained water carrying nearly as many bacteria as the raw lake water, although in other respects it appears of good quality. Such water is less safe than an unfiltered supply, for the consumer, seeing a clear water running from the faucet, is deceived into thinking that it is bacterially satisfactory.

It is greatly to be regretted that water of such ideal characteristics for drinking and domestic purposes as that normally supplied by Flint Lake should be subject to pollution. As this unfortunate condition cannot be relieved, proper filtration must be relied on to protect the health of the community. This can be obtained with the system just installed.

Yours truly,

H. E. BARNARD,
Chemist to the State Board of Health.

STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND., December 18, 1907.

H. E. Barnard, Chemist State Board of Health:

Dear Sir—At the request of the Valparaiso Home Water Company, on November 21 I visited Valparaiso to inspect their improved supply, and was invited by the company to conduct an official test of the new filtration plant constructed by the Pittsburg Filter Manufacturing Co., prior to its acceptance. The plant was to be operated by Mr. Fred Noll, a representative of the Pittsburg company, during the test, and the bacteriological work was to be done in the laboratories of the Valparaiso University, preparation for which had been made by Professor Timmons. At your suggestion I remained at Valparaiso from November 21 to December 7. The following report embodies the results of the tests and directions for the mechanical control of the plant essential to its satisfactory operation.

The supply is taken from Flint Lake, which is about three miles outside the city. The lake is fed entirely by surface drainage, the watershed covering about eight square miles. The lake is surrounded by houses which empty their drainage into it. The vaults in some instances are but a few feet from the shore. Over this situation the water company has no con-

trol, as their option only grants the right to pump from the lake what water they need. The water is of excellent character during the winter months, but in the summer time decomposing algae growths impair its quality, and the increased amount of household drainage and other pollution by boating and fishing parties all combine to render the water of doubtful character. For this reason the company decided to filter the water so they could deliver to their customers a perfectly safe and wholesome water throughout the year.

The plant is of the mechanical, or rapid sand type, with which aluminum sulphate is used as a coagulant. It consists of a sedimentation basin and two equipped filter beds, together with four coagulation tanks and a clear well. The water is pumped from the lake into the sedimentation basin and undergoes aeration as it drops from the overflow of the intake pipe into a concrete mixing box where the alum is added. The settling basin is concrete, with a concrete wall passing through the center, which affords the water a longer period of sedimentation, after which it is drawn from the top of the basin onto the beds. A constant water level is kept in the basin by means of a butterfly valve. The solution tanks are of concrete and equipped with mechanical agitating devices for the use of iron and lime as a coagulant if desired. The filters are reinforced concrete rectangular tanks, each having two cast-iron overflow troughs. The beds consist of three feet of sand and eight inches of gravel (the effective size of sand being .42, according to the analysis made by Mr. Alvord). Underlying the gravel is a manifold system with a strainer every six inches. The water is drawn from the beds into the clear well below, from which it is pumped to the consumer. Inasmuch as the plant is not equipped with rate controllers the outlet valves from the filters must be set at their rating each time the filters are put in service. The filters are washed by means of a 2,000,000-gallon centrifugal pump, the wash being effected entirely by water agitation. The present capacity of the plant is 1,400,000 gallons daily, each filter having a capacity of 700,000 gallons. By equipping a third filter, the shell of which is already installed, the capacity can be raised to 2,100,000 gallons.

The water is pumped by direct pressure through wooden mains, the service lines being of lead. The wooden pressure lines seem to give excellent service. On examining a piece that had been in use for 20 years no signs of deterioration were apparent. The only objection to the wooden mains was that a peculiar red worm attacks and lives on the wood. An increase of pressure occasionally sweeps the worms from their borings and carries them through the mains to the consumer. An examination of a piece of pipe about two feet long showed where several hundred of these worms had lived.

At the time of my arrival, there had been no preliminary analyses made to determine the necessary amount of coagulant to be used to give the proper efficiency, and this work was first undertaken. There was no incubator at the university in which a temperature of 20° C. could be kept: the plates had to be grown at room temperature, which varied from 16 to 18° centigrade.

The official test was started November 26 with the use of 1½ grains of alum as a coagulant. Arrangements had been made at this time to keep a

constant 20° C. temperature. One sample was taken from the raw water, one from each filter and one from the clear well three times daily. After the 20° C. temperature had been sustained for a few hours the plates became liquid, due to the fact that the gelatin had not been made stiff enough to stand this temperature. Consequently the plates for November 24, 25 and 26 were spoiled, and it became necessary to go back to the 16°-18° incubation and to start the test one day later. The evening of November 27 I visited the university and found a large number of students having band practice in the laboratory in which the work was being conducted. As it was impossible to conduct the test under these conditions, on November 28 I called a meeting of the water-works directors, together with Professor Kinsey, Professor Timmons and Dr. Evans, city health officer, at the office of the water-works company. When I told them the work could not proceed under existing conditions the company officials admitted that they had not realized the importance of the work, and assured me that they would do everything in their power to assist in bringing the test to the desired standard. New media was made and a day and night watchman employed to keep an even 20° C. temperature. Growths were continued, however, at 16° C. until the new media was ready for use. Plates for November 27 were counted on November 30, the plates of 8 a. m. showing good results, as did also the plates of 11 a. m., while the plates of 4 p. m. were bad. For this reason the alum was increased to 2 grains. The plates of November 28 were counted December 1, the 7:30 a. m. samples giving good efficiency, while the 2 p. m. samples were again poor. I visited the plant with Mr. Nell in the afternoon and found that the filters had not been properly rated and the coagulant was not being fed uniformly with the pumpage, the result being that during the day pumpage the water was passing through the filters at a rate which was over their capacity, they were simply straining the water instead of filtering it. At this time we rated and set the filters at their maximum capacity and made arrangements for a constant rate of feeding alum. The plates of the samples taken November 29 showed the 8 a. m. samples to be good, the 11:30 a. m. bad and the 3:15 p. m. bad. The samples of November 30 showed the same results, the morning samples being good but the noon and the afternoon samples again poor. December 1 I visited the plant with Mr. Noll and looked into the condition of the sand beds, which we found to be covered in spots with mud balls, which in places reached a depth of two inches.

The bacterial analyses show that by having the beds properly rated and clean and by feeding the coagulant uniformly a proper efficiency can be obtained. The results of December 1, 2, 3, 4, 9, 10, 11 and 12 confirm this opinion. December 4 was the last count that I could make at Valparaiso, the analyses of the 9th, 10th, 11th and 12th being made in the laboratory at Indianapolis. The analyses of November 27, 28, 29 and 30 show that unless the plant is properly handled it will not do the work desired. The chemical analysis of December 3 shows a very satisfactory reduction in albuminoid ammonia, color iron and total solids. I was asked about the advisability of using lime and iron as a coagulant in the place of alum. Inasmuch as the water is not turbid, and a soft water is desired, I urgently advised the use of alum, as it does not need the attention and requires less work for the operation of the plant. It is often hard to use iron without a

large amount of suspended matter in the untreated water. It was suggested that weirs be put in the settling basin in order to determine the rate of filtration. This is strongly opposed, as more difficulty would be met with in obtaining a good Schmutzdecke, for the flakes would be broken up so finely in coming over the weir that they would be apt to go through the sand beds and be found in the effluent. It will be difficult to wash the beds properly, as the sewer is not large enough to carry off the wash water. This sewer is of concrete, and after completion was found not to be as large as the specifications required, owing to the fact that the wooden forms on the inside were not removed. This oversight reduces the sewer about four inches in size and also causes much more friction. I am also afraid that the pumping capacity of the wash pump is not enough to give the bed an effective wash, as it leaves spots, sometimes a foot and a half square, that are not broken up at all. As calculated on the average results of the first ten days' run, the wash water used at the present time is about 5.4 per cent of the total effluent. If water could be put through the beds more rapidly, which would consequently wash them in less time, I feel confident that the percentage of wash water could be reduced, and at the same time the beds receive much better washing. On account of this poor washing I saw several spots in the beds that had cracked because they had not been properly broken up in the wash, and the coagulant had mixed with the sand, forming lumps and cracks resembling the cracking of dry clay. One of these cracks was about $1\frac{1}{2}$ feet long and measured 4 inches deep. With the bed in this condition it is impossible for the filter to do good work. The No. 2 filter washes a little better than the No. 3 filter, due to the fact that the pipe, which was reduced from 8 inches to 6 inches, supplying the wash water for the No. 2 filter is but 20 inches long, while the pipe supplying the No. 3 filter is about 5 feet long; moreover, the line to the No. 3 filter has a 8-6-inch reduction Y instead of a T. This gives a much greater loss by friction to No. 3 bed than it does to No. 2. This Y should be replaced by a T, and if possible the 6-inch reduction be removed.

I fear the present capacity of the plant will not be enough to supply the summer consumption, and I would advise the equipping of the third filter as soon as possible. The summer pumpage very often exceeds 1,000,000 gallons daily, and as the present percentage of wash water is $5\frac{1}{2}$ per cent, or 55,000 gallons per million, the total amount of water required to be filtered daily would be 1,055,000 gallons. At least three-fifths of this would be pumped in the twelve hours of daytime. This means that in the daytime there would be pumped 633,000 gallons. As the total capacity for this twelve hours is 700,000 gallons, this leaves but 67,000 gallons in twelve hours for loss of head caused by the formation of a mat. This is entirely too small an excess of capacity to keep the filters running for twelve hours, and leaves no time for the washing of a bed if necessary. It very often happens that during the daytime the pumpage will be at the rate of two-thirds the total consumption. This would amount in twelve hours to 703,332 gallons, which is 3,332 gallons more than the capacity for the same time. Provided the beds are perfectly clean and there is no loss of head, it can be plainly seen that under such conditions, if the demand is supplied, the water must be simply strained and not filtered. At the present time the pumps are pumping over a million gallon rate at various times during the

day. At one particular time the clear well was being filled during this high rate of pumpage, and as nearly as I could estimate both filters were working at full capacity. If this condition occurs during the winter months, it is much more liable to occur during the increased pumpage of the summer. It is very necessary that the filters are not overworked in the summer-time, as the untreated water is at that time in a much worse condition than it is in the winter. I also suggest that the aeration pipe be removed if trouble with the beds airbinding occurs during the winter months. This will prevent the water from absorbing an excessive amount of air. I would advise also that analyses be made daily to determine the bacterial efficiency of the plant, and also that tests be made for *B. coli*. It is also advisable that alkalinity tests and tests for free alum in the effluent be made daily. The plant is capable of doing very efficient work if great care is observed in its operation, especially as to the feeding of the coagulant and keeping the beds properly cleaned and not running them over rate. If this is not done the plant will not do the work required of it. This statement is confirmed by the analyses of November 27, 28 and 29.

The following tables show the results of both the raw and filtered water for twelve days, and include statements as to the source of the water, period of use and number of bacteria per cubic centimeter:

TABLE No. 1.

RESULTS OF BACTERIOLOGICAL ANALYSES.

NOVEMBER 27—

Alum, 1.75 grains. *B. coli*. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	320	.....	8 a. m. by Loomis.
Filter 2.....	1	64	Yes.	
Filter 3.....	4	37	Yes.	
Raw.....	.....	210	.....	11 a. m. by Noll.
Filter 2.....	1½	96	Yes.	
Filter 3.....	6	48	Yes.	
Well.....	.....	46	.....
Raw.....	.....	4480	.....	4 p. m. by Noll.
Filter 2.....	6	156	No.	
Filter 3.....	1	1	Yes.	
Well.....	.....	165	.....

NOVEMBER 28—

Alum, 1.75 grains. *B. coli*. Raw, positive. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	1630	.....	7:30 a. m. by Loomis.
Filter 2.....	5	5	Yes.	
Filter 3.....	½	30	Yes.	
Well.....	.....	15	.....
Raw.....	.....	1110	.....	2 p. m. by Noll.
Filter 2.....	3	400	No.	
Filter 3.....	6	250	No.	
Well.....	.....	250	.....

NOVEMBER 20—

Alum, 1.75 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	1370	.....	.....
Filter 2.....	.....	32	.....	8 a.m. by Brad-
Filter 3.....	4½	30	Yes.	ley.
Well.....	.....	.....	.....	.....
Raw.....	.....	950	.....	.....
Filter 2.....	2	300	No.	11:30 a. m. by
Filter 3.....	½	408	No.	Bradley.
Well.....	.....	113	.....	.....
Raw.....	.....	1090	.....	.....
Filter 2.....	6	467	No.	3:15 p. m. by
Filter 3.....	4	807	No.	Bradley.
Well.....	.....	555	.....	.....

¹No sample taken.

NOVEMBER 30—

Alum, 1.75 grains. B. coli. Raw, positive. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	1400	.....	.....
Filter 2.....	4	46	Yes.	8 a. m. by Brad-
Filter 3.....	1	196	No.	ley.
Well.....	.....	39	.....	.....
Raw.....	.....	856	.....	.....
Filter 2.....	½	478	No.	11:30 a. m. by
Filter 3.....	2½	613	No.	Bradley.
Well.....	.....	436	.....	.....
Raw.....	.....	1180	.....	.....
Filter 2.....	5	450	No.	4 p. m. by Brad-
Filter 3.....	7	400	No.	ley.
Well.....	.....	425	.....	.....

DECEMBER 1—

Alum, 2.00 grains +. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	4320	.....	.....
Filter 2.....	1	27	Yes.	8 a. m. by Brad-
Filter 3.....	2	35	Yes.	ley.
Well.....	.....	104	.....	.....
Raw.....	.....	5780	.....	.....
Filter 2.....	3	71	Yes.	3 p. m. by Brad-
Filter 3.....	2½	34	Yes.	ley.
Well.....	.....	187	.....	.....

DECEMBER 2—

Alum, 2.25 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	260	.....	.....
Filter 2.....	3	5	Yes.	7:45 a. m. by
Filter 3.....	$\frac{1}{2}$	128	Yes, by averaging.	Bradley.
Well.....	.....	45	.....	.....
Raw.....	.....	700	.....	.....
Filter 2.....	$\frac{1}{2}$	215	No.	10 a. m. by
Filter 3.....	3	70	Yes.	Bradley.
Well.....	.....	66	.....	.....
Raw.....	.....	310	.....	.....
Filter 2.....	$4\frac{1}{2}$	65	Yes.	3:15 p. m. by
Filter 3.....	$5\frac{1}{2}$	16	Yes.	Bradley.
Well.....	.....	58	.....	.....

DECEMBER 3—

Alum, 2.25 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	2570	.....	.....
Filter 2.....	3	14	Yes.	7 a. m. by Brad-
Filter 3.....	$\frac{1}{2}$	26	Yes.	ley.
Well.....	.....	129	.....	.....
Raw.....	.....	390	.....	.....
¹ Filter 2.....	6	13	Yes.	11:30 a. m. by
² Filter 2.....	$\frac{1}{2}$	79	Yes.	Bradley.
Filter 3.....	$3\frac{1}{2}$	34	Yes.	.....
Well.....	.....	61	.....	.....
Raw.....	.....	250	.....	.....
Filter 2.....	$2\frac{1}{2}$	23	Yes.	2 p. m. by Brad-
Filter 3.....	4	63	Yes.	ley.
Well.....	.....	43	.....	.....

¹Before washing.²After washing.

DECEMBER 4—

Alum, 1.25 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	.....	350	.....	.....
Filter 2.....	2	7	Yes.	6:40 a. m. by
Filter 3.....	$\frac{1}{2}$	56	Yes.	Bradley.
Well.....	.....	50	.....	.....
Filter 2.....	4	49	Yes.	11 a. m. by
.....	.....	.....	.....	Bradley.
Raw.....	.....	670	.....	.....
Filter 2.....	4	7	Yes.	3:45 p. m. by
Filter 3.....	8	57	Yes.	Bradley.
Well.....	.....	Spilled.	.....	.....

DECEMBER 9—

Alum, 2.50 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	970	.....	2 p. m. by Bradley.
Filter 3.....	38	Yes.	
Well.....	36	Yes.	

DECEMBER 10—

Alum, 2.50 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	1430	.....	1:30 p. m. by Bradley.
Filter 2.....	9	Yes.	
Well.....	26	Yes.	

DECEMBER 11—

Alum, 2.50 grains. B. coli. Raw, negative. Filtered, negative.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time Taken.
Raw.....	1500	.....	1:30 p. m. by Bradley.
Filter 3.....	80	Yes.	
Well.....	25	Yes.	

DECEMBER 12—

Alum, 2.50 grains. B. coli. Raw, negative. Filtered, positive.

Sample from	Hours Filter in Use.	Bacteria per C. C.	According to Contract.	Time taken.
Raw.....	20	.....	4 p. m. by Bradley.
Filter 3.....	18	Yes.	
Well.....	2450	No.	

The samples taken December 12 were evidently marked wrong. The raw water coming in as the well, and the well as the raw water. It will be seen that by turning these samples around the results check up with those of the other dates. It would be impossible for the well water to contain 2,450 bacteria while the raw water contained but 20.

Respectfully submitted,

J. H. BREWSTER,
Water Chemist.

TABLE No. 2.

 CHEMICAL ANALYSES.
 (Parts in 100,000.)

Lab. No.	Date of Collection.	Odor.	Color.	Turbidity.	Sediment.	AMMONIA.		NITROGEN AS—		Chlorine.	Solids.		Hardness.	Iron.	B. Coli.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
510	Aug. 20, 1906	None	5.0	None	Much fine.	.0160	.0570	.0000	.0000	2.00	8.2	2.9	3.8	.00	Gas formers present.
511	Aug. 20, 1906	Decid. veg.	7.0	None	Con. flocc.	.0112	.0288	.0200	.0003	.40	9.3	4.5	4.9	.01	Present.
939	Mar. 22, 1907	Very SL	5.0	Ver SL	Very SL	.0014	.0188	.0300	.0003	.20	5.9	4.4	2.6	.02	Acid gas formers
1452	Dec. 4, 1907	None	50.0	None	SL flocc.	.0024	.0164	.0000	.0000	.20	10.6	6.6	2.2	.04	Absent.
1453	Dec. 4, 1907	None	2.0	None	None	.0054	.0078	.0000	.0001	.20	4.8	3.4	0.8	.01	Absent.
1475	Dec. 17, 1907	None	46.0	None	None	.0018	.0062	.0000	.0000	.30	7.5	3.7	2.4	.02	Absent.
1476	Dec. 17, 1907	None	2.0	None	None	.0016	.0030	.0000	.0004	.30	7.7	6.2	0.3	.00	Absent.

 1. Unfiltered water.
 2. Filtered water.

On August 2, 1908, a second visit was made to the filter plant of the Home Water Company of Valparaiso for the purpose of inspecting the changes made as the result of the inspection completed in November, 1907.

During that test it was found that the wash water delivered to the filters was not sufficient, and also that the sewer was not capable of carrying off a sufficient amount of soiled water. Since that time the construction company has enlarged the sewer outlet so that more water can pass off, and has also replaced the six-inch reduction line which carried the wash water to the filters with a larger line, which greatly improved the efficiency of the wash system.

The plant is now in condition to furnish a perfectly safe and wholesome water, and with the attention that is given and the interest taken by the operators there is no reason why Valparaiso should have any water troubles.

One condition was observed about the lake which should be entirely eliminated. Outhouses owned and used by the summer cottagers are so close to the lake shore that all their drainage runs directly into the lake. Some of the vaults are so close to the water that the lake, during high periods, surrounds and floods them, carrying all the filth into the lake. This condition is not only unsanitary in itself, but is damaging to the water supply. For while it is true that the plant will filter the water, yet the lake should be so protected that the water-works have as good a water to handle as possible, for if the increasing amount of sewage is all emptied into the lake it will eventually become grossly polluted, under which conditions it will then be a very difficult proposition for the water company to produce a safe water for drinking and domestic purposes.

STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND., May 29, 1908.

Dr. Henry Moore, Chairman Tuberculosis Commission, Indianapolis, Ind.:

Dear Doctor—At the request of your Board, on May 27, 1908, I visited the proposed site of the State Sanitarium for Tuberculosis at Rockville, Ind., and investigated the water supply of the area under consideration.

The most abundant water supply is that lying in the sand and gravel of the "bottom" land to the north of the bluffs and bounded on either side by never-falling streams. This area is a basin which was originally occupied by a lake or river, and is now the drainage outlet for several square miles of sparsely settled country about equally divided into pasture and tilled land.

The geological formation of this valley is varied. Shale, sandstone and coal veins extend into it and underlie it in different places. But the test

well recently driven to a depth of 38 feet shows the general formation of the central portion of the area to be made up as follows: Clay, 5 feet; coarse yellow sand, carrying little water, 10 feet; hard packed sand and clay, impervious to water, 5 feet; sand and gravel, 18 feet. This last stratum carries an inexhaustible supply of water.

The water when pumped is free from color, odor and turbidity, and is in effect a filtered water of absolute purity so far as pollution by organic matter or sewage is concerned. Because of the large amount of iron-bearing formation through the entire region, the water contains considerable iron in solution as ferrous carbonate. When exposed to the air oxidation takes place and the iron is precipitated as the brown oxid of iron. The presence of iron to the extent of .22 parts per 100,000 in the water is its only objectionable feature.

CHEMICAL ANALYSIS.

Odor.....	None.
Color.....	2.0
Turbidity.....	Much on standing; more when first drawn.
Sediment.....	None.
Free ammonia.....	.0120
Albuminoid ammonia.....	.0065
Nitrates.....	.0050
Nitrites.....	.0000
Chlorine.....	1.2
Total solids.....	29.8
Fixed solids.....	29.0
Hardness.....	29.2
Iron.....	.22
Colon bacilli.....	Absent.

The effect of iron in potable waters may be best shown by reference to the following authorities:

Whipple, "The Value of Pure Water": "Iron-bearing waters are often very annoying to the householder. By precipitation of iron oxide they may render the water turbid, make stains of iron rust on clothes, choke up the pipes, tanks, etc., and form brown stains in marble washbowls under the faucets."

Tresh, "The Examination of Waters and Water Supplies": "In potable waters the iron, in probably all cases, occurs as ferrous carbonate kept in solution by an excess of carbonic acid. Upon exposure to air oxidation quickly occurs, and the water becomes more or less brown and opalescent. If more than a trace of iron is present a deposit of the oxidized product occurs. The unsightly appearance of such a water is generally sufficient to condemn it for domestic purposes. If the water contains enough iron to impart the characteristic chalybeate taste, it probably could not be considered wholesome. Although I have never heard of any ill effects following the continued use of a water containing a trace of iron, I should expect headache and constipation to be produced amongst those unaccustomed to its use. For washing purposes such a water is very objectionable, as it stains the clothes, the so-called iron-mould being due to the deposition of iron oxide within the fibres of the material affected."

Leffman: "The proportion of iron in water constantly used for drinking purposes should not much exceed three parts per million."

Hazen: "An authority of equal reputation places the permissible limit of iron in a water at 0.5 parts per million."

Because of the fact that iron is present in quantity in limestone, all deep well waters carry considerable iron. The city supplies of the State vary widely in iron content as shown by the following table:

IRON CONTENT IN PARTS PER 100,000.

Montpeller .....	.30
Logansport .....	.10
Muncie .....	.14
Huntington .....	.10
Crawfordsville .....	.10
Monticello .....	.35
Indianapolis .....	.15
Girls' Industrial School, Clermont.....	.50
Lebanon	1.00
Ft. Wayne .....	.18
Greensburg .....	.20
Bedford .....	.40
Orleans .....	.20
Columbia .....	.15
South Bend .....	.30

This table shows many public supplies containing more iron than the water from the test well.

If it appears that it is not advisable to supply water containing iron it may be easily taken out.

Mason says: "Aeration is of especial value in rendering some kinds of ferruginous well-waters, which are otherwise pure, fit for domestic use. By blowing air into such waters, or even by letting them stand freely exposed to the atmosphere, the iron is oxidized to insoluble ferric oxide, and may be easily removed by filtration."

The water supplies of Asbury Park, N. J.; Far Rockaway, N. Y.; Superior, Wis.; Reading, Mass., and many other places carry much iron, and in each city different methods of treatment are in successful operation which remove it at slight cost.

In addition to this source of water supply, every ravine or valley on the proposed site serves as a drainage outlet for a considerable area, and in several places water issues from the ground in apparently never-failing flowing springs. This water is pure, soft and free from iron and may be depended upon to furnish a constant supply, if so desired.

Such a supply will, however, be safe for drinking and domestic purposes only as long as the watershed is free from pollution.

SUMMARY.

An inexhaustible supply of water may be obtained from gravel underlying clay 20 feet below the surface.

The water so obtained is naturally filtered and is free from organic pollution.

The water is practically free from bacteria.

Chemically, it is of excellent composition, except for the presence of iron to the extent of .22 parts per 100,000.

If this iron is objectionable because of its taste, effect on laundry work, or physiological action, it can readily be removed.

Yours very truly,

H. E. BARNARD,

Chemist to State Board of Health.

STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND., July 7, 1908.

Dr. A. I. Donaldson, Washington, Ind.:

My Dear Doctor Donaldson—Herewith find a report of the inspection and test of the filtration plant at Washington, Ind., made by J. H. Brewster on June 29, and 30, July 1, 2 and 3:

"The filter plant and pumping station is located on the banks of White River, about four miles west of the city.

"The filter plant is constructed in a rectangular building 122 by 42½ feet. The north end contains two separate settling basins which are arranged so that one or both can be used at any time. The basins are each 60 by 20 feet and 12 feet deep. These basins are well baffled, to give the water a longer period of sedimentation, and are also equipped with a skimming device which allows only the best water to enter the filter beds. The filters are the design and construction of the Norwood Engineering Company. The filtering equipment consists of two fully equipped filters with sand beds of Mt. Tom sand, under which is a layer of gravel to protect the strainer system. Between the sand and gravel is an air system for agitation while washing the beds. The air is supplied by a Norwood air compressor. These filters are also equipped with loss-of-head gauges and rate-controllers. There are also two unequipped filters held in reserve to be equipped and put in service when increased consumption demands it. Each filter has a sand area of 13 feet 6 inches by 15 feet 8 inches, or 202½ square feet, and has a daily capacity of 525,000 gallons, the total filtering capacity of the plant being 1,050,000, or 1,000,000 gallons, with a goodly allowance for wash water. The water enters the settling basins by means of a Lawrence centrifugal pump, which is directly connected to a vertical high-speed engine. The coagulant is injected into the water through this pump. The water passes through the sedimentation basins by a gravity flow and enters the filters. The water filtering through them passes by gravity to the clear-water basin, from which it is pumped by a Worthington pump into a standpipe, from which the water is delivered to the consumer by gravity. In washing the filters, the water is taken off the high-service lines at the pumping station. The filters are so constructed that both air and water can be used at the same time, with no loss of sand.

"In addition to the filter plant and pumping station there is another feature of interest. An independent pipe line runs from the station to the Baltimore and Ohio Southwestern Railroad shops, which supplies unfiltered river water to them by means of a Holly pump that is used for this pur-

pose exclusively. The railroad uses about 500,000 gallons daily, and prefers raw water to the filtered.

"The water that is filtered is taken from White River about two hundred yards below the outlet of a creek which carries all the storm water of the city. The creek also receives the house sewage from the houses that have sanitary water-closets, and at flood times it receives the drainage from old coal mines. In other words, this creek is simply a trunk sewer for the city, and is not only a menace to public health in itself, but is a damaging feature for a wholesome water supply. The immediate removal of this source of pollution is demanded if the proper purification of the already contaminated river is to be expected.

"The work of sedimentation can be made most effective with the proper use of the coagulant. The coagulant is injected into the Lawrence centrifugal pump for the purpose of giving a thorough mixing. This is without doubt accomplished, but in my estimation it has a tendency to break up the hydrate of iron so as to form a very fine granular coagulant instead of one of a flocculent nature.

"The solution tanks for the coagulant are not equipped with an agitating device, and as this is very essential in obtaining an even strength of solution, it is necessary that such apparatus be installed.

"The only condemning feature of the plant that I could find is the condition of the sand-beds during the time of washing the filters. The beds have become packed and do not thoroughly break up during the washing. This may be due to several reasons: First, that the pressure of wash-water is not sufficient to thoroughly break up the beds. Second, that the strainer system under the packed portions have become stopped up. Third, that the filters have not been washed clean enough, allowing too much hydrate of iron to stay on the beds, and in this way uniting the sand grains to form a compact mass which is very hard to lift with the ordinary amount of wash-water. Another may be that there has not been enough coagulant used in the sedimentation basins, and as the sediment held in suspension in the water is largely fine particles of clay, that a large amount of this clay going on the beds and not having a sufficient wash, forms this compact mass. I was unable to determine just what the cause of this packing was, as my time was so limited that I would have had to dig the beds up while I was testing the plant, and as digging up both beds at the same time would affect the test to the extent that I could not determine just what the plant has been doing. I will say, however, that I do not think it has been caused by an insufficient pressure of wash-water, inasmuch as bed No. 2 is in a much better condition than No. 1. If one of the other three reasons has been the cause, the beds can be put back in shape with little difficulty. The distribution of air is very even over the bed, but an increase of the air pressure will be of great benefit in the washing. It is advisable that if a new pump is at any time installed arrangements be made for a by-pass that will take the water from the clear well to be used to wash the filters. In this way the city pressure will not be affected as much and undoubtedly a greater wash-water pressure can be obtained.

"The design and construction of the plant is very good and the workmanship as a whole is to be highly commended. With a very few changes, and by getting the filter beds back in shape with the proper operation, the

plant will produce an excellent quality of water. I would strongly recommend that a laboratory be equipped and that daily bacteriological examinations be made of both the raw and filtered water for the bacterial counts and also for *Bacillus coli communis*.

"The bacterial examination shows that while the plant during this test lacks two or three per cent of the percentage of reduction that it is capable of producing, the water is unquestionably better than the well supplies. It is very noticeable that in every test, filter No. 1 has a lower bacterial reduction than No. 2. The bed in filter No. 1 is packed much more than that of filter No. 2, which is undoubtedly the reason for the lower bacterial reduction. These figures also show that by placing the beds in the proper condition a most excellent water can be obtained.

"A most interesting point is noticed in the bacterial counts of samples No. 379 A, No. 380 A and No. 381 A.

"Sample No. 380 A was taken in the river above the sewer inlet and contained 990 bacteria per 1 cubic centimeter. Sample No. 381 A was taken in the White River at the mouth of the sewer, and contained 2,860 bacteria per cubic centimeter.

"Sample No. 379 A is the raw water used at the filter plant and contains 1,310 bacteria per cubic centimeter.

"This shows that the water that is filtered is materially affected by the sewer emptying into the river, inasmuch as the count of the raw water is about one-half more than the water above the sewer, and it also shows that by removing the sewer the water supply will be greatly benefited."

Appended also please find reports of the chemical analyses of the samples of water collected from White River above the sewage inlet at the intake, and of filtered water. The character of the waters are indicated on the separate reports. The bacterial examination of the raw water and the effluents of the filters Nos. 1 and 2 is indicated in the separate table. Mr. Brewster's report shows a very satisfactory condition of the public water supply, although the bacterial efficiency of the filters is not as high as it is possible to obtain under more satisfactory conditions of the beds. The most noticeable fact connected with the entire investigation is the decided increase in pollution of the river water by the influence of sewage from the city drainage system at a point but a few hundred yards above the intake of the water company. It is proven that the character of the public water supply of Washington is greatly superior to that obtainable from surface or shallow wells, which, under present existing conditions, are but receptacles for the effluents from kitchen drains and privy vaults, and many of which, at certain periods of the year, are subject to overflow by the waters from the three polluted ditches which cross the city.

Yours very truly,

H. E. BARNARD,
Chemist State Board of Health.

CHEMICAL ANALYSIS OF WATER FROM WASHINGTON PUBLIC SUPPLY.

(Parts in 100,000.)

Source.	Lab. No.	Date of Collection.	Odor.	Color.	Turbidity.	Sediment.	AMMONIA.		NITROGEN AS		Chlorine.	Solids.		Hardness.	Iron.	B. Cell.
							Free.	Albuminoid.	Nitrate.	Nitrite.		Total.	Fixed.			
City supply.....	1714	May 6, 1908	None...	60	Very much...	Slight.....	.0035	.0120	.0200	.0200	.6	17.2	12.2	7.8	.12	Present.
City supply.....	1753	May 21, 1908	None...	9	None.....	None.....	.0045	.0070	.0400	.0000	.7	20.2	14.8	14.2	.02	Present.
City supply.....	1876	July 2, 1908	None...	4	None.....	None.....	.0022	.0064	.0000	.0002	1.2	29.8	20.2	18.0	.001	Absent
River water at intake.....	1877	July 2, 1908	None...	4	Slight.....	Red flocculent	.0054	.0120	.0000	.0010	1.3	35.4	27.4	19.5	.06	Present.
River water above entrance of sewer.....	1878	July 2, 1908	None...	4	Slight.....	Red flocculent	.0028	.0140	.0100	.0002	1.2	37.2	26.0	18.0	.06	Present.
City supply.....	2044	Aug. 10, 1908	None...	5	None.....	None.....	.0016	.0060	.0100	.0000	1.1	34.0	24.0	20.0	.00	Absent.

BACTERIAL EXAMINATION.

Date.	Time.	Source.	Bacteria per 1 C.C.	Per Cent. of Re- duction.	B. Coli.	Lab. No.
June 30, 1908..	2 p.m.	Raw water.....	1230	.....	Suspicious..	368 A.
June 30, 1908..	2 p.m.	Filter No. 1.....	55	95.5	Absent.....	368 A.
June 30, 1908..	2 p.m.	Filter No. 2.....	39	96.8	Absent.....	367 A.
July 1, 1908..	10 a.m.	Raw water.....	1680	.....	Present.....	371 A.
July 1, 1908..	10 a.m.	Filter No. 1.....	96	94.3	Absent.....	368 A.
July 1, 1908..	10 a.m.	Filter No. 2.....	45	97.3	Absent.....	370 A.
July 1, 1908..	4 p.m.	Raw water.....	1570	.....	Suspicious..	374 A.
July 1, 1908..	4 p.m.	Filter No. 1.....	115	92.7	Absent.....	372 A.
July 1, 1908..	4 p.m.	Filter No. 2.....	88	94.4	Absent.....	373 A.
July 2, 1908..	10 a.m.	Raw water.....	1420	.....	Suspicious..	375 A.
July 2, 1908..	10 a.m.	Filter No. 1.....	88	91.8	Absent.....	376 A.
July 2, 1908..	10 a.m.	Filter No. 2.....	49	96.6	Absent.....	377 A.
July 2, 1908..	3 p.m.	Raw water.....	1310	.....	Suspicious..	379 A.
July 2, 1908..	3 p.m.	Filter No. 1.....	104	92.1	Absent.....	378 A.
July 2, 1908..	3 p.m.	Filter No. 2.....	1	.....	.....	.....
July 2, 1908..	3 p.m.	White River above sewer.....	990	.....	Absent.....	380 A.
July 2, 1908..	3 p.m.	White River at mouth of sewer.....	2860	.....	Present.....	381 A.

¹ Broken in shipment.

STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND., July 5, 1908.

Mr. L. J. Weisenberger, Supt., Vincennes Water Supply Co., Vincennes, Ind.:

Dear Sir—Mr. J. H. Brewster, who has recently visited your filtration plant, has made the following report to this office:

"On July 3, 1908, I visited Mr. L. J. Weisenberger, Superintendent of the Vincennes Water Supply Co., and through his courtesy made an inspection of their station.

"The filter plant is of the Continental type with two 500,000-gallon unit tub filters and two 800,000-gallon rectangular concrete filters, all of which are gravity filters with a filtering capacity of 2,600,000 gallons. The sandbeds are of Red Wing and Jersey sand. The filters are equipped with air agitation, supplied by a Root blower to assist in washing. The air agitation is most satisfactory, and is operated with a high degree of efficiency.

"The water to be filtered is taken from the Wabash River through two intake suction lines, one 165 feet and the other 235 feet from the shore, by means of two four-million-gallon low service Wheeler pumps, and is delivered to the settling basins, which consist of six tubs, each 20 feet in diameter and 16 feet high, and holding 37,699 gallons, affording a total settling basin capacity of 226,195 gallons. These tubs are divided into two sections of three each, and are used alternately, one section delivering water to the filters while the other fills and settles. The coagulant used is aluminum hydrate. The washing of the filters is done with a four-million-gallon Lawrence centrifugal pump, which, together with the excellent air agitation, affords a most effective wash. The water, after being filtered, flows by gravity into the clear water basin, which is a separate concrete structure 45 feet in diameter and 15 feet deep, with a capacity of 11,928 gallons. The pumping equipment, which lifts the water from the clear well into a standpipe, consists of a 4,000,000-gallon Worthington high duty pump and two 2,000,000-gallon Dean of Holyoke pumps, which give a pumping capacity of 8,000,000 gallons daily. The boiler capacity consists of two Heine boilers of 200 horsepower each.

"The standpipe into which the water is pumped is 200 feet high and 22 feet in diameter, with a capacity of 570,200 gallons. The city is supplied by gravity pressure from this standpipe, which affords such efficient fire protection that fire engines are not needed. The design and construction of the station is excellent and the equipment is complete, except that no laboratory is maintained for the chemical and bacteriological control of the water. The manner in which the plant is kept in repair and the cleanliness of the station should receive special mention. The completeness of this station not only assures the people of Vincennes excellent fire protection, but with it there is no reason why they should not receive a perfectly safe and wholesome water for drinking and domestic purposes."

We are greatly pleased to learn of the excellent provisions you have made for furnishing a satisfactory water supply to the city of Vincennes. We feel it is not possible to run a modern water plant successfully unless a laboratory is maintained where the daily efficiency of the filters can be determined, and we trust that you will find it possible to install such laboratories.

If this department is able to afford you any assistance in controlling the character of the supply, we shall be glad to do so.

Yours very truly,

H. E. BARNARD,
Chemist State Board of Health.

STATE LABORATORY OF HYGIENE,
INDIANAPOLIS, IND.

To the Honorable Mayor and City Council of Connersville, Ind.:

Gentlemen—At the request of your honorable body that the State Board of Health make a preliminary survey of the possible sources of water supply for your city, I visited Connersville on the 15th of July, and in your company, together with the city engineer, went over the several proposed sites for water supply, examined the geological formation, made brief sanitary surveys to determine the extent of present pollution and the possibilities of future pollution, and took samples of water for bacteriological and chemical analysis.

The city of Connersville has at hand two sources of water supply, namely the White Water River, flowing by the city, and the gravel beds underlying the city. It is probable that either supply will furnish sufficient water for the needs of the city for years to come. The third source of supply, deep wells, cannot be considered as available for your city because of the peculiar character of the water, which renders it unfit for drinking and domestic uses.

The present supply is obtained from the canal of the Connersville Hydraulic Company, which is fed by the White Water River some seven miles above the pumping station, and which brings sufficient water to the city to furnish a water supply and, as well, provide hydraulic power for the Connersville Furniture Company and run the pumps of the water company for at least a part of each day. The supply is not filtered and is essentially raw river water, less the impurities deposited in the bed of the canal and removed by oxidation during the seven miles of its flow. The watershed of

the river is largely tilled farm land, populated by isolated agricultural communities. The largest city on the watershed is Cambridge City, with 3,000 population, some 12 miles above Connersville. Milton, 10 miles above, is a small town of perhaps 500 population. Cambridge City has no sewage system. About twenty families discharge their sewage into the canal, which runs through the town and later re-enters the river. All storm water from the principal streets also flows directly to the canal and thence to the river.

The bed of the canal is almost dry for some distance between Cambridge City and Connersville, and there is no reason why any sewage deposited in the canal above Lockport should reach the intake of the water company except by flowing first into the river bed at Cambridge City and there being greatly diluted by river water before re-entering the canal at Lockport. The small stream flowing in the bed of the abandoned canal above Lockport is not polluted by sewage, as is shown by the bacterial counts appended to the report, and is evidently derived from seepage into the canal from the adjacent watershed. If it appeared that at any time high water might flush out the dry bed and open a way for pollution to enter the canal directly, the flow can be entirely diverted by throwing a dam across the lower end of the dry canal and cutting a channel through to the river. At the time of my inspection the river was high because of recent rains, and carried a large amount of silt, suspended particles of clay evidently washed off the ploughed lands on the watershed. That the river commonly carries silt during periods of high water is shown by the fact that the canal bed supplying the pumping station is almost full of deposited mud, so that even in the center of the canal no more than four feet of water was flowing when the canal was full. Because of the excessive quantity of mud and silt present in the water, it is not suitable for either drinking or household purposes. The river is polluted by the run-off of inhabited and tilled farmlands, and also by the household sewage of a number of families at Cambridge City, as well as by all the street washings of that city, and the canal after it leaves the river at Lockport is for a portion of its length paralleled by the tracks of the railroad, and therefore at all times subject to pollution by the dejecta of passengers. Bacterial counts of samples taken from the river at Lockport, from the canal both above and below the gates at the head of the canal, and from the canal at the pumping station, in every case show an excessive number of bacteria, among which are noted the types commonly occurring in fecal matter.

For the reasons as above stated and because the supply is constantly subject to pollution which no system of supervision or corrective legislation can prevent, I do not think the supply at present furnished the city is suitable for drinking or safe for domestic purposes.

It is suggested that a deep well supply can be readily obtained which will be clear, free from pollution and those unpleasant unesthetic qualities that render river water obnoxious. Such a supply should not be considered. As before suggested, the water underlying Connersville, as shown by analyses of water taken from the 100-foot well at the ice plant, from the 165-foot well of the Connersville Blower Company, and most conclusively from the well driven in the bed of the river at East Connersville, is not suitable for drinking. It is heavily mineralized, has a decided taste and

odor, contains sufficient iron to precipitate when exposed to the air and so produce a turbid water, and also contains so much calcium sulfate and other salts of lime that it cannot be used for boiler purposes except after softening. Furthermore, deep-well waters are not desirable as water supplies, because of the limited amount of water they can be depended upon to furnish. There may be plenty of water when the wells are first driven, but as the city grows and demands an increased supply, as private wells of manufacturing corporations are sunk deeper and deeper, as paved streets and storm sewers shut off the supply which originally filtered downward to the low levels, the quantity of water available becomes less and less, and it has been the universal experience that a time eventually comes when it is necessary to supplement the deep-well supply by some form of filtered surface water.

There is no reason to expect similar conditions not to arise at Connersville. Indeed, a 100-foot well driven at the Krell Auto-Grand Plano Factory does not furnish a sufficient supply for the boilers at the present time. The ground-water level in Indiana has fallen from eight to twenty feet in the last few years. Many wells that formerly flowed an abundant supply must now be pumped heavily in order to meet the demands upon them.

The third proposed supply is to sink gallery wells along the river bank at some point east of the city lot at Ninth and Fayette streets. Gallery well supplies are in use in several cities of this State, and under normal conditions furnish an acceptable supply. There is no reason to believe that a good and safe water might not be obtained from gallery wells supplied by infiltration from the White Water River. The wells would have to be protected from overflow during the flood seasons, since the shallow sand and gravel bed above them would not be sufficient thoroughly to filter the water. The engineering feature of such a system would be simple and would only require the installation of a pumping station to take the water from the wells and either distribute it by direct pressure or lift to a standpipe erected on one of the hills adjacent to the city, from which it would flow by gravity under sufficient head for both fire protection and domestic purposes.

After considering all the suggested plans and taking into consideration the character of the various supplies and the cost of installation of the systems, I believe the most feasible plan for the city of Connersville is to take the water from the canal at the present pumping station, purify it by passing it through a system of mechanical filters, and then pumping it to a storage reservoir or standpipe, thence to be distributed by a gravity system. The reasons for this decision are as follows:

1. The water is already delivered to the pumping station located near the center of the city.
2. The canal affords a sedimentation basin seven miles long for the removal of all gross impurities.
3. The water level of the canal is twelve feet above the floor of the present pumping station, thus giving ample opportunity to install mechanical filters to be operated by gravity and to deliver water to the pump well without additional pumping.

4. The character of the water is such that it is well adapted to purification by treatment either with alum or sulfate of iron and subsequent filtration by mechanical filters.

5. The water power at the pumping station is sufficient to operate the plant at no expense for fuel.

6. The pumps now in operation are adapted for use with a filtration and storage reservoir system.

7. The filtered water will be entirely free from sediment, color, odor, iron, excess of mineral constituents, and will contain not over fifty bacteria to the cubic centimeter, and will be in every way a safe, palatable, abundant supply.

8. As the city grows the new units can be added to the filtration system and every extra demand upon the supply cheaply and quickly met.

The character of the present supply, the deep wells and the shallow wells in various points in the city, is shown by the following tables of analyses, which have been made during the past two years, either at the request of the health officers, private citizens who suspect the quality of their well waters, or in order to provide available data for use in this report.

Yours truly,

H. E. BARNARD,
Chemist to the State Board of Health.

BACTERIA COUNTS ON WATERS FROM CONNERSVILLE, IND.

Plated on Lactos Agar at 24° C. for 72 hours.

Source of Sample.	Lab. No.	Bacteria per Cubic Centimeter.	B. Coli.	Chlorine parts Per 100,000.
Below canal gate at Lockport.....	382 A.	4000	Present.	.20
Bayou above canal gate	383 A.	1500	Present.	.10
Above canal gate in current.....	384 A.	3000	Absent.	.10
At dam at Lockport.....	385 A.	980	Gas formers.	.10
Junction of dry bed with canal of Hydraulic Co....	386 A.	540	Gas formers.	.10
River at East Connersville at driven well.....	387 A.	1080	Present.	.20
Water at pumping station settled over night.....	388 A.	1220	Present.	.10
Water at pumping station.....	389 A.	1160	Present.	.10

COMMENT.

The samples from the White Water at the dam at East Connersville, and from the canal at the pumping station, contain practically the same number of bacteria. A 97 per cent. reduction of the bacterial content by filtration will produce a water containing not over 30 bacteria per cubic centimeter. The high counts above and below the canal gates at Lockport are doubtless abnormal. They should certainly not show higher than the river at the same point. The count on the water sample from the dry bed of the abandoned canal is but half that in the river and canal water. Chlorine determinations were made on each sample, and in every case were normal for unpolluted waters of the White Water Valley.

WATER ANALYSES.
(Parts in 100,000.)

Source.	Lab. No.	Date of Collection.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.
							Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
Town Pump 30 ft., 200 yds. east of of Connersville from river.	91	Oct. 27, 1905	Considerably earthy.	0.1	None	Slight.	.0810	.0044	.2500	.0040	1.2	39.0	31.0	.....	.040
Dug well, 40 ft.	232	Mar. 12, 1906	None.	0.0	None	Slight.	.0004	.0038	.4000	.0002	2.7	53.1	40.5	14.6	Trace.
Shallow well, 44 ft., 2,000 ft. from river.	284	April 2, 1906	Slight earthy.	0.0	None.	Very slight.	.0034	.0184	2.0000	.0080	4.8	104.7	79.5	21.6	Trace.
Dug well school yard, 30 ft.	715	Oct. 23, 1906	None.	0.0	None.	Very slight.	.0030	.0024	.0700	.0003	0.8	32.1	25.0	26.1	Trace.
Driven well, 32 ft.	754	Nov. 11, 1906	None.	0.0	Very slight.	Very slight, reddish.	.0210	.0040	.0000	.0000	0.4	28.4	24.3	20.5	.040
Driven well, 20-25 ft.	1053	June 27, 1907	None.	0.0	None.	None.	.0010	.0074	.1000	.0004	0.2	32.6	24.3	25.9	.000
Driven well, 20-25 ft.	1211	Aug. 13, 1907	None.	0.0	None.	None.	.0024	.0020	.2000	Trace	0.6	31.4	23.8	20.3	.020
Driven well, 155 ft., water at 65 ft.	1212	Aug. 13, 1907	None.	0.0	None.	None.	.0080	.0028	.0000	.0006	26.6	77.2	70.4	30.2	.000
Driven well, 36 ft.	1343	Oct. 3, 1907	Odor of muck	0.0	None.	Very slight.	.0010	.0006	.0500	.0032	0.50	24.0	24.4	23.6	.000
Driven well, 48 ft.	1386	Nov. 11, 1907	None.	0.0	None.	None.	.0004	.0024	.2000	.0000	0.90	39.8	28.6	28.2	.000
Driven well within 100 ft. of large cemetery.	1388	Nov. 8, 1907	None.	4.0	None.	None.	.0010	.0016	.1200	.0000	0.40	34.8	27.8	27.2	.000
Driven well, 42 ft.	1940	Apr. 13, 1908	None.	9.0	Very much	Very much.	.0860	.0040	.0050	.0002	1.4	60.8	52.0	40.2	.240
Well of John Page.	1921	July 19, 1908	None.	0.0	None.	None.	.0004	.0012	.1500	.0001	1.0	43.6	36.4	28.4	.001
Well at ice plant.	1922	July 19, 1908	Dec.	4.0	Much.	None.	.1720	.0092	.0000	.0002	1.2	39.8	32.8	31.8	.004
Water at intake for water works.	89	Oct. 27, 1905	Slight earthy	0.10	None.	Slight.	.0026	.0086	.1200	.0010	0.30	35.5	26.0	.....	.000
White Water River.	90	Oct. 27, 1905	Slight earthy	0.10	None.	Slight.	.0010	.0080	.1500	.0006	0.20	35.4	27.2	.....	.048
White Water River.	1052	June 27, 1907	Slight earthy	0.0	Very slight.	Slightly flocculent.	.0040	.0094	.0700	.0010	0.20	33.6	24.0	24.5	Trace.
Under current of White Water River.	1054	June 27, 1907	None.	0.0	Very slight	Slight.	.0000	.0080	.0100	.0004	1.2	53.0	40.4	33.3	.004
City supply.	1087	July 2, 1907	None.	0.0	None.	None.	.0014	.0074	.1500	.0004	0.30	33.2	24.0	24.5	.000
City supply.	1359	Oct. 26, 1907	None.	0.0	None.	Slight flocculent.	.0024	.0016	.0700	.0000	0.80	32.4	24.3	23.9	.000



CHARACTER OF THE INDIANAPOLIS PUBLIC WATER SUPPLY.

During the past year a careful study has been made of the water furnished by the Indianapolis Water Company at the public street corners and at the State House. In some instances the bacterial count was made on agar-agar incubated for 24 hours at 38° C., but in most of the work gelatin plates were used which were incubated for 72 hours at 20° C. The fermentation test for *B. coli* was also made in a Smith tube filled with dextrose broth in the usual way. In no instance were colon bacilli present. Except in a few cases the bacterial count was under 100 per cubic centimeter. In two instances the fountain at Illinois and 16th streets showed a high bacterial count, and during the first week of the investigation the count at this point was decidedly higher than elsewhere. The results of the bacterial examination showed the water to be entirely satisfactory in character and quite suitable for drinking purposes. That this condition holds good throughout the year has also been shown by a large number of chemical analyses, which in every instance have corroborated the bacterial count.

BACTERIAL EXAMINATION OF INDIANAPOLIS WATER.

Lab. No.	Date Collected.	Source of Sample.	Bacteria Per 1 C. C.	Culture Media.
168 A	Feb. 7, 1908	State House, elevator tap.....	4	Agar.
169 A	Feb. 7, 1908	State House, laboratory tap.....	2	Agar.
170 A	Feb. 14, 1908	State House, elevator tap.....	0	Agar.
171 A	Feb. 17, 1908	State House, elevator tap.....	19	Agar.
172 A	Feb. 18, 1908	State House, elevator tap.....	14	Agar.
173 A	Feb. 19, 1908	State House, elevator tap.....	6	Agar.
174 A	Feb. 20, 1908	State House, elevator tap.....	3	Agar.
175 A	Feb. 24, 1908	State House, elevator tap.....	0	Agar.
176 A	Feb. 25, 1908	State House, elevator tap.....	4	Agar.
195 A	Feb. 28, 1908	State House, elevator tap.....	0	Agar.
203 A	Mar. 6, 1908	State House, elevator tap.....	0	Agar.
207 A	Mar. 10, 1908	State House, elevator tap.....	0	Agar.
213 A	Mar. 11, 1908	State House, elevator tap.....	15	Agar.
218 A	Mar. 12, 1908	State House, elevator tap.....	3	Agar.
222 A	Mar. 13, 1908	State House, elevator tap.....	10	Agar.
231 A	Mar. 16, 1908	State House, elevator tap.....	160	Agar.
236 A	Mar. 17, 1908	State House, elevator tap.....	9	Agar.
240 A	Mar. 18, 1908	State House, elevator tap.....	11	Agar.
244 A	Mar. 19, 1908	State House, elevator tap.....	4	Agar.
250 A	Mar. 24, 1908	State House, elevator tap.....	4	Agar.
254 A	Mar. 25, 1908	State House, elevator tap.....	8	Agar.
259 A	April 6, 1908	State House, elevator tap.....	8	Agar.
261 A	April 8, 1908	State House, elevator tap.....	4	Agar.
264 A	April 17, 1908	State House, elevator tap.....	128	Gelatine.
270 A	June 4, 1908	Bellefontaine and 13th st., fountain.....	2700	Gelatine.
271 A	June 4, 1908	Illinois and 16th st., fountain.....	39	Gelatine.
272 A	June 4, 1908	Kentucky ave. and Washington st., fountain.....	48	Gelatine.
273 A	June 4, 1908	Washington st. and Elder ave., fountain.....	70	Gelatine.
274 A	June 4, 1908	West and Washington sts., fountain.....	27	Gelatine.
275 A	June 4, 1908	Fountain Square, fountain.....	47	Gelatine.
276 A	June 4, 1908	Washington st. and Arsenal ave., fountain.....	16	Gelatine.
277 A	June 4, 1908	State House, laboratory tap.....	65	Gelatine.
278 A	June 5, 1908	Bellefontaine and 13th st., fountain.....	2100	Gelatine.
279 A	June 5, 1908	Illinois and 16th st., fountain.....	79	Gelatine.
280 A	June 5, 1908	Kentucky ave. and Washington st., fountain.....	18	Gelatine.
281 A	June 5, 1908	Washington st. and Elder ave., fountain.....	49	Gelatine.
282 A	June 5, 1908	West and Washington sts., fountain.....	45	Gelatine.
283 A	June 5, 1908	Fountain Square, fountain.....	15	Gelatine.
284 A	June 5, 1908	Washington st. and Arsenal ave., fountain.....		

BACTERIAL EXAMINATION OF INDIANAPOLIS WATER—Continued.

Lab. No.	Date Collected.	Source of Sample.	Bacteria Per 1 C. C.	Culture Media.
285 A	June 5, 1908	State House, laboratory tap	10	Gelatine.
286 A	June 6, 1908	Bellefontaine and 13th sts., fountain	62	Gelatine.
287 A	June 6, 1908	Illinois and 16th sts., fountain	400	Gelatine.
288 A	June 6, 1908	Kentucky ave. and Washington st., fountain	76	Gelatine.
289 A	June 6, 1908	Washington st. and Elder ave., fountain	35	Gelatine.
290 A	June 6, 1908	West and Washington sts., fountain	22	Gelatine.
291 A	June 6, 1908	Fountain Square, fountain	26	Gelatine.
292 A	June 6, 1908	Washington st. and Arsenal ave., fountain	30	Gelatine.
293 A	June 8, 1908	Bellefontaine and 13th sts., fountain	174	Gelatine.
294 A	June 8, 1908	Illinois and 16th sts., fountain	390	Gelatine.
295 A	June 8, 1908	Kentucky ave. and Washington st., fountain	63	Gelatine.
296 A	June 8, 1908	Washington st. and Elder ave., fountain	92	Gelatine.
297 A	June 8, 1908	West and Washington sts., fountain	62	Gelatine.
298 A	June 8, 1908	Fountain Square, fountain	110	Gelatine.
299 A	June 8, 1908	Washington st. and Arsenal ave., fountain	65	Gelatine.
300 A	June 8, 1908	State House, laboratory tap	12	Gelatine.
301 A	June 9, 1908	Bellefontaine and 13th sts., fountain	35	Gelatine.
302 A	June 9, 1908	Illinois and 16th sts., fountain	109	Gelatine.
303 A	June 9, 1908	Kentucky ave. and Washington st., fountain	29	Gelatine.
304 A	June 9, 1908	Washington st. and Elder ave., fountain	41	Gelatine.
305 A	June 9, 1908	West and Washington sts., fountain	86	Gelatine.
306 A	June 9, 1908	Fountain Square, fountain	68	Gelatine.
307 A	June 9, 1908	Washington st. and Arsenal ave., fountain	43	Gelatine.
308 A	June 9, 1908	State House, laboratory tap	20	Gelatine.
311 A	June 10, 1908	Bellefontaine and 13th sts., fountain	54	Gelatine.
312 A	June 10, 1908	Illinois and 16th sts., fountain	56	Gelatine.
313 A	June 10, 1908	Kentucky ave. and Washington st., fountain	40	Gelatine.
314 A	June 10, 1908	Washington st. and Elder ave., fountain	42	Gelatine.
315 A	June 10, 1908	West and Washington sts., fountain	33	Gelatine.
316 A	June 10, 1908	Fountain Square, fountain	46	Gelatine.
317 A	June 10, 1908	Washington st. and Arsenal ave., fountain	27	Gelatine.
318 A	June 10, 1908	Illinois and 16th sts., fountain	49	Gelatine.
319 A	June 10, 1908	Illinois and 16th sts., fountain	47	Gelatine.
320 A	June 11, 1908	Bellefontaine and 13th sts., fountain	101	Gelatine.
321 A	June 11, 1908	Kentucky ave. and Washington st., fountain	102	Gelatine.
322 A	June 11, 1908	Washington st. and Elder ave., fountain	77	Gelatine.
323 A	June 11, 1908	West and Washington sts., fountain	42	Gelatine.
324 A	June 11, 1908	Illinois and 16th sts., fountain	47	Gelatine.
325 A	June 11, 1908	Fountain Square, fountain	51	Gelatine.
326 A	June 11, 1908	Washington st. and Arsenal ave., fountain	47	Gelatine.
327 A	June 11, 1908	State House, laboratory tap	19	Gelatine.
328 A	June 12, 1908	Bellefontaine and 13th sts., fountain	112	Gelatine.
329 A	June 12, 1908	Illinois and 16th sts., fountain	77	Gelatine.
330 A	June 12, 1908	Kentucky ave. and Washington st., fountain	58	Gelatine.
331 A	June 12, 1908	Washington st. and Elder ave., fountain	170	Gelatine.
332 A	June 12, 1908	West and Washington sts., fountain	59	Gelatine.
333 A	June 12, 1908	Fountain Square, fountain	51	Gelatine.
334 A	June 12, 1908	Washington st. and Arsenal ave., fountain	47	Gelatine.
335 A	June 12, 1908	State House, laboratory tap	26	Gelatine.
336 A	June 13, 1908	Bellefontaine and 13th sts., fountain	130	Gelatine.
337 A	June 13, 1908	Illinois and 16th sts., fountain	83	Gelatine.
338 A	June 13, 1908	Kentucky ave. and Washington st., fountain	40	Gelatine.
339 A	June 13, 1908	Washington st. and Elder ave., fountain	58	Gelatine.
340 A	June 13, 1908	West and Washington sts., fountain	27	Gelatine.
341 A	June 13, 1908	Fountain Square, fountain	48	Gelatine.
342 A	June 13, 1908	Washington st. and Arsenal ave., fountain	40	Gelatine.
343 A	June 13, 1908	State House, laboratory tap	47	Gelatine.
344 A	June 15, 1908	Bellefontaine and 13th sts., fountain	93	Gelatine.
345 A	June 15, 1908	Illinois and 16th sts., fountain	80	Gelatine.
346 A	June 15, 1908	Kentucky ave. and Washington st., fountain	70	Gelatine.
347 A	June 15, 1908	Washington st. and Elder ave., fountain	160	Gelatine.
348 A	June 15, 1908	West and Washington sts., fountain	50	Gelatine.
349 A	June 15, 1908	Fountain Square, fountain	180	Gelatine.
350 A	June 15, 1908	Washington st. and Arsenal ave., fountain	61	Gelatine.
351 A	June 15, 1908	State House, laboratory tap	58	Gelatine.
352 A	June 16, 1908	Bellefontaine and 13th sts., fountain	87	Gelatine.
353 A	June 16, 1908	Illinois and 16th sts., fountain	79	Gelatine.
354 A	June 16, 1908	Kentucky ave. and Washington st., fountain	46	Gelatine.
355 A	June 16, 1908	Washington st. and Elder ave., fountain	81	Gelatine.
356 A	June 16, 1908	West and Washington sts., fountain	67	Gelatine.
357 A	June 16, 1908	Fountain Square, fountain	119	Gelatine.
358 A	June 16, 1908	Washington st. and Arsenal ave., fountain	89	Gelatine.
359 A	June 16, 1908	State House, laboratory tap	64	Gelatine.

NOTE.—No B. coli found.

*Agar culture 24 hours, at 38° C.

*Gelatine culture 72 hours, at 20° C.



A STUDY OF THE DRINKING WATER CARRIED BY INTERURBAN TRAINS ENTERING THE TERMINAL STATION AT INDIANAPOLIS.

Railroads engaged in the passenger service always provide coaches and cars with receptacles containing drinking water for the convenience and comfort of their patrons. This practice is followed by electric roads in the interurban service, as well as by steam roads, running longer trains for greater distances. Complaint as to the character of drinking water carried by trains is common, and no doubt in many instances is warranted by the unsanitary condition of the fountains and drinking cups. In order to determine the character of the water carried by the interurban roads running into Indianapolis, and the condition of the water tanks during the winter of 1908, cars on all of these roads were visited daily and the water tanks inspected for a period of one month. At the time of inspection samples of water were taken for bacteriological analysis. The bacterial counts were made on lactose litmus agar at 38° C. for 24 hours. The total number of colonies developed in this time was determined. The number of acid formers was also determined, and the fermentation test for *B. coli* was made with the Smith fermentation tube filled with dextrose broth. The results of the studies made are herein summarized.

Terre Haute, Indianapolis & Eastern System.—The water used on the line running between Indianapolis and Martinsville is placed in the tanks at Mooresville. The tanks were kept in excellent condition and the water showed a very low bacterial count and was in most cases free from acid formers, and in no instance contained colon bacilli.

Indianapolis and Richmond.—The tanks on the Indianapolis and Richmond line are kept in good condition, and the water which is placed in them at Richmond, Greenfield or New Castle, as is most convenient, is of good quality. A few of the bacterial counts were high at the beginning of the investigation, but after more care was taken in filling the tanks at the car barns it materially improved. No *B. coli* were observed at any time. The lines running to Danville and Greencastle carried a very poor water from a bacterial standpoint, a condition due to carelessness in filling the tanks, as the water used is that furnished by the Indianapolis Water Co., which is at all times of good quality. The car barns were visited and a thorough investigation made of conditions there by the man-

MAN

ager for the purpose of determining the cause for the high bacterial counts. While the counts were high, no *B. coli* were observed except in a single instance.

The line running to Lafayette on the Northwestern division fills its water tanks at Lebanon. At the beginning of the investigation the bacterial counts were high. This was due to carelessness in filling and in care of the tanks, and after the first few days of examination the bacterial count became normal. No colon bacilli were observed at any time.

The water carried by the cars on the Ben Hur Route, running to Crawfordsville, was in good condition except on one day. At no time were acid formers or *B. coli* observed.

Indiana Union Traction Company.—The water tanks on the Indiana Union Traction Company's lines were in very poor condition. They were rusty and dirty, and most of the tanks had no covers and were placed in the cars near the heating stoves. The water supplied the line running to Kokomo, Logansport and Peru was placed in the tanks at Tipton. At times the water was good, but other times it contained a large number of bacteria, which was undoubtedly due to the bad condition of the tanks.

The water on the line running to Muncie was very poor most of the time. It had a very high bacterial count and in several instances colon bacilli were present. The water used is obtained from the Muncie city supply, and in its original condition is of good quality. A visit to the Muncie car barns showed several unsanitary conditions to exist around the water stand. The superintendent in charge of the barns, when advised of the unsatisfactory character of the water, immediately took steps to improve the unsanitary surroundings.

Indianapolis and Cincinnati Traction Company.—The water supplied by the Indianapolis and Cincinnati Traction Co. was found to be of excellent quality and the water tanks were in good condition. The line running to Greensburg was supplied with water at Shelbyville, and the Connersville line took water at Rushville.

Indianapolis, Columbus and Southern Line.—The tanks on the Indianapolis, Columbus and Southern line running to Seymour were clean and in excellent condition, but the bacterial content of the water was high and not satisfactory. The water was frequently turbid, and colon bacilli were present part of the time. The water supplied is taken from the city supply of Columbus, which is not of good quality.

The following tables show the source of each sample examined, the condition of the tank, the total number of bacteria, the number of acid-forming bacteria and the presence or absence of colon bacilli. The chemical analysis was also made of a single sample of water taken from each of the lines inspected, the report of which follows:

BACTERIAL EXAMINATION OF INTERURBAN WATER SUPPLY.

TERRE HAUTE, INDIANAPOLIS AND EASTERN.

TO MARTINSVILLE.

Lab. No.	Date Collected.	Source.	Condition of Tank.	Car Number.	Number of Bacteria.	Number of Acid Formers.	B. Coli.
138 A	Jan. 30, 1908	Mooreville.....	Clean.....	22	5	0	—
139 A	Feb. 3, 1908	Mooreville.....	Clean.....	36	93	5	—
140 A	Feb. 4, 1908	Mooreville.....	Clean.....	28	2	0	—
141 A	Feb. 5, 1908	Mooreville.....	Clean.....	48	6	0	—
142 A	Feb. 6, 1908	Mooreville.....	Clean.....	110	0	0	—
143 A	Feb. 7, 1908	Mooreville.....	Clean.....	34	2	1	—
144 A	Feb. 10, 1908	Mooreville.....	Clean.....	20	11	1	—
145 A	Feb. 14, 1908	Mooreville.....	Clean.....	28	0	0	—
146 A	Feb. 17, 1908	Mooreville.....	Clean.....	52	0	0	—
147 A	Feb. 18, 1908	Mooreville.....	Clean.....	38	3	1	—
148 A	Feb. 19, 1908	Mooreville.....	Clean.....	26	0	0	—
149 A	Feb. 20, 1908	Mooreville.....	Clean.....	24	0	0	—
150 A	Feb. 24, 1908	Mooreville.....	Clean.....	22	0	0	—
151 A	Feb. 25, 1908	Mooreville.....	Clean.....	26	0	0	—

Average number bacteria, 9; acid formers, 1.

TO RICHMOND.

10 A	Nov. 18, 1907	Richmond.....	Clean.....	74	21	0	—
15 A	Nov. 19, 1907	Richmond.....	Clean.....	76	18	1	—
21 A	Nov. 20, 1907	Richmond.....	Clean.....	74	256	15	—
107 A	Jan. 30, 1908	Greenfield.....	Clean.....	74	9	0	—
108 A	Jan. 31, 1908	Richmond.....	Clean.....	21	26	3	—
109 A	Feb. 3, 1908	Richmond.....	Clean.....	68	2000	2	—
110 A	Feb. 4, 1908	Greenfield.....	Clean.....	66	18	0	—
111 A	Feb. 6, 1908	Richmond.....	Clean.....	68	17	2	—
112 A	Feb. 7, 1908	Greenfield.....	Clean.....	23	0	0	—
113 A	Feb. 10, 1908	Greenfield.....	Clean.....	78	3	0	—
114 A	Feb. 13, 1908	New Castle.....	Clean.....	74	15	0	—
115 A	Feb. 14, 1908	Richmond.....	Clean.....	62	0	0	—
116 A	Feb. 17, 1908	Greenfield.....	Clean.....	25	15	0	—
117 A	Feb. 18, 1908	Greenfield.....	Clean.....	78	6	0	—
118 A	Feb. 19, 1908	Greenfield.....	Clean.....	25	3	0	—
119 A	Feb. 20, 1908	Greenfield.....	Clean.....	76	0	0	—
120 A	Feb. 24, 1908	Greenfield.....	Clean.....	66	0	0	—
121 A	Feb. 25, 1908	Greenfield.....	Clean.....	78	3	1	—

Average number bacteria, 123; acid formers, 1.

TO DANVILLE—NORTHWESTERN DIVISION.

102 A	Jan. 30, 1908	Ind'pls car barn....	Clean.....	100	180	3	—
103 A	Jan. 31, 1908	Ind'pls car barn....	Clean.....	135	70	0	—
104 A	Feb. 3, 1908	Ind'pls car barn....	Clean.....	101	84	3	—
105 A	Feb. 10, 1908	Ind'pls car barn....	Clean.....	105	38	0	—
106 A	Feb. 17, 1908	Ind'pls car barn....	Clean.....	135	1900	1	—

Average number bacteria, 654; acid formers, 1.



TO GREENCASTLE.

Lab. No.	Date Collected.	Source.	Condition of Tank.	Car Number.	Number of Bacteria.	Number of Acid Formers.	B. Coli.
122 A	Jan. 30, 1908	Indianapolis	Excellent	49	140	0	—
123 A	Jan. 31, 1908	Indianapolis	Excellent	45	84	13	—
124 A	Feb. 3, 1908	Indianapolis	Excellent	47	126	2	—
125 A	Feb. 4, 1908	Indianapolis	Excellent	37	1950	50	—
126 A	Feb. 5, 1908	Indianapolis	Excellent	29	7500	6	—
127 A	Feb. 6, 1908	Indianapolis	Excellent	39	858	67	—
128 A	Feb. 7, 1908	Indianapolis	Excellent	41	5	0	—
129 A	Feb. 10, 1908	Indianapolis	Excellent	45	72	0	—
130 A	Feb. 13, 1908	Indianapolis	Excellent	41	55	0	—
131 A	Feb. 14, 1908	Indianapolis	Excellent	37	1200	0	—
132 A	Feb. 17, 1908	Indianapolis	Excellent	31	1800	4	—
133 A	Feb. 18, 1908	Indianapolis	Excellent	41	15000	0	—
134 A	Feb. 19, 1908	Indianapolis	Excellent	49	600	0	—
135 A	Feb. 20, 1908	Indianapolis	Excellent	35	350	0	—
136 A	Feb. 24, 1908	Indianapolis	Excellent	49	30	2	+
137 A	Feb. 25, 1908	Indianapolis	Excellent	47	20	0	—

Average number bacteria, 1,855; acid formers, 9.

TO LAFAYETTE—NORTHWESTERN DIVISION.

11 A	Nov. 18, 1907	Lebanon	Clean	52	52	0	—
13 A	Nov. 19, 1907	Lebanon	Clean	46	356	0	—
32 A	Nov. 22, 1907	Lebanon	Clean	48	32	0	—
86 A	Jan. 30, 1907	Lebanon	Clean	50	6	0	—
87 A	Jan. 31, 1908	Lebanon	Clean	54	508	8	—
88 A	Feb. 3, 1908	Lebanon	Clean	46	815	41	—
89 A	Feb. 4, 1908	Lebanon	Clean	43	358	0	—
90 A	Feb. 5, 1908	Lebanon	Clean	46	14	0	—
91 A	Feb. 6, 1908	Lebanon	Clean	54	3	0	—
92 A	Feb. 7, 1908	Lebanon	Clean	50	1	0	—
93 A	Feb. 10, 1908	Lebanon	Clean	50	2	0	—
94 A	Feb. 13, 1908	Lebanon	Clean	50	0	0	—
95 A	Feb. 14, 1908	Lebanon	Clean	30	0	0	—
96 A	Feb. 17, 1908	Lebanon	Clean	50	6	0	—
97 A	Feb. 18, 1908	Lebanon	Clean	40	0	0	—
98 A	Feb. 19, 1908	Lebanon	Clean	40	0	0	—
99 A	Feb. 20, 1908	Lebanon	Clean	20	0	0	—
100 A	Feb. 24, 1908	Lebanon	Clean	43	0	0	—
101 A	Feb. 25, 1908	Lebanon	Clean	40	1	0	—

Average number bacteria, 113; acid formers, 2.

BEN HUR ROUTE.

TO CRAWFORDSVILLE.

152 A	Jan. 30, 1908	Crawfordsville	Clean	101	3	0	—
153 A	Jan. 31, 1908	Crawfordsville	Clean	104	2500	0	—
154 A	Feb. 3, 1908	Crawfordsville	Clean	101	19	0	—
155 A	Feb. 4, 1908	Crawfordsville	Clean	101	9	0	—
156 A	Feb. 5, 1908	Crawfordsville	Clean	201	2	0	—
157 A	Feb. 6, 1908	Crawfordsville	Clean	101	2	1	—
158 A	Feb. 7, 1908	Crawfordsville	Clean	103	10	0	—
159 A	Feb. 10, 1908	Crawfordsville	Clean	106	8	0	—
160 A	Feb. 13, 1908	Crawfordsville	Clean	104	20	0	—
161 A	Feb. 14, 1908	Crawfordsville	Clean	101	0	0	—
162 A	Feb. 17, 1908	Crawfordsville	Clean	106	0	0	—
163 A	Feb. 18, 1908	Crawfordsville	Clean	102	25	0	—
164 A	Feb. 19, 1908	Crawfordsville	Clean	105	0	0	—
165 A	Feb. 20, 1908	Crawfordsville	Clean	105	0	0	—
166 A	Feb. 24, 1908	Crawfordsville	Clean	108	0	0	—
167 A	Feb. 25, 1908	Crawfordsville	Clean	108	0	0	—
21 A	Nov. 11, 1908	Crawfordsville	Clean	104	162	0	—
22 A	Nov. 19, 1908	Crawfordsville	Clean	104	211	0	—
23 A	Nov. 20, 1908	Crawfordsville	Clean	104	48	0	—

Average number bacteria, 159; acid formers, 0.

INDIANA UNION TRACTION COMPANY.

TO KOKOMO, LOGANSPOET AND PERU.

Lab. g No.	Date Collected.	Source.	Condition of Tank.	Car Number.	Number of Bacteria.	Number of Acid Formers.	B. Coli.
14 A	Nov. 19, 1907	Tipton.....	No cover.....	268	33	0	—
25 A	Nov. 20, 1907	Tipton.....	No cover.....	254	168	0	—
29 A	Nov. 21, 1907	Tipton.....	No cover.....	268	68	0	—
30 A	Nov. 22, 1907	Tipton.....	No cover.....	252	18	0	—
72 A	Jan. 30, 1908	Tipton.....	No cover.....	250	1850	6	—
73 A	Jan. 31, 1908	Tipton.....	Rusty.....	279	2	0	—
74 A	Feb. 3, 1908	Tipton.....	No cover.....	246	70	6	—
75 A	Feb. 4, 1908	Tipton.....	No cover.....	278	3	1	—
76 A	Feb. 5, 1908	Tipton.....	No cover.....	275	4	1	—
77 A	Feb. 6, 1908	Tipton.....	No cover.....	266	3	0	—
78 A	Feb. 7, 1908	Tipton.....	No cover.....	246	2	0	—
79 A	Feb. 10, 1908	Tipton.....	Rusty.....	264	23	0	—
80 A	Feb. 13, 1908	Tipton.....	No cover.....	254	12	5	—
81 A	Feb. 14, 1908	Tipton.....	No cover.....	268	4	0	—
82 A	Feb. 18, 1908	Tipton.....	No cover.....	259	21	0	—
83 A	Feb. 19, 1908	Tipton.....	No cover.....	257	9	0	—
84 A	Feb. 24, 1908	Tipton.....	No cover.....	254	0	0	—
85 A	Feb. 25, 1908	Tipton.....	No cover.....	249	1000	20	—

Average number bacteria, 183; acid formers, 2.

TO MUNCIE.

9 A	Nov. 17, 1907	Muncie.....	No cover.....	271	62	0	—
12 A	Nov. 18, 1907	Muncie.....	No cover.....	296	22	0	—
16 A	Nov. 19, 1907	Muncie.....	No cover.....	296	31	0	—
57 A	Jan. 30, 1907	Muncie.....	Rusty and no cover..	296	4	0	—
58 A	Jan. 31, 1908	Muncie.....	Rusty and no cover..	257	3	0	—
59 A	Feb. 3, 1908	Muncie.....	No cover.....	247	154	12	—
60 A	Feb. 4, 1908	Muncie.....	No cover.....	263	15	4	—
61 A	Feb. 6, 1908	Muncie.....	Rusty.....	264	3000	10	+
62 A	Feb. 7, 1908	Muncie.....	No cover.....	250	6	1	+
63 A	Feb. 10, 1908	Muncie.....	Rusty.....	285	16	4	—
64 A	Feb. 13, 1908	Muncie.....	No cover.....	258	65	3	—
65 A	Feb. 14, 1908	Muncie.....	No cover.....	297	0	0	—
66 A	Feb. 17, 1908	Muncie.....	No cover.....	250	600	15	—
67 A	Feb. 18, 1908	Muncie.....	No cover.....	253	15000	10	+
68 A	Feb. 19, 1908	Muncie.....	Rusty.....	262	6000	1	—
69 A	Feb. 20, 1908	Muncie.....	No cover.....	266	3	0	—
70 A	Feb. 24, 1908	Muncie.....	No cover.....	253	175	0	—
71 A	Feb. 25, 1908	Muncie.....	No cover.....	252	360	1	—

Average number of bacteria, 1417; of acid formers, 3.

INDIANAPOLIS AND CINCINNATI TRACTION COMPANY.

TO GREENSBURG.

196 A	Mar. 4, 1908	Shelbyville.....	Clean.....	.....	20	0	—
202 A	Mar. 6, 1908	Shelbyville.....	Clean.....	.....	65	0	—
206 A	Mar. 10, 1908	Shelbyville.....	Clean.....	.....	0	0	—
211 A	Mar. 11, 1908	Shelbyville.....	Clean.....	.....	0	0	—
217 A	Mar. 12, 1908	Shelbyville.....	Clean.....	.....	0	0	—
221 A	Mar. 13, 1908	Shelbyville.....	Clean.....	.....	3	0	—

Average number of bacteria, 11; of acid formers, 0.



TO CONNERSVILLE.

Lab. No.	Date Collected.	Source.	Condition of Tank.	Car Number.	Number of Bacteria.	Number of Acid Formers.	B. Coli.
197 A	Mar. 4, 1908	Rushville.....	Clean.....	.....	0	0	—
201 A	Mar. 6, 1908	Rushville.....	Clean.....	.....	8	0	—
205 A	Mar. 10, 1908	Rushville.....	Clean.....	.....	0	0	—
212 A	Mar. 11, 1908	Rushville.....	Clean.....	.....	0	0	—
216 A	Mar. 12, 1908	Rushville.....	Clean.....	.....	0	0	—
220 A	Mar. 13, 1908	Rushville.....	Clean.....	.....	0	0	—
20 A	Nov. 19, 1907	Rushville.....	Clean.....	.....	6	0	—
24 A	Nov. 20, 1907	Rushville.....	Clean.....	.....	0	0	—

Average number of bacteria, 2; of acid formers, 0.

INDIANAPOLIS, COLUMBUS AND SOUTHERN.

TO SEYMOUR.

19 A	Nov. 19, 1907	Columbus.....	Clean.....	.....	122	0	—
198 A	Mar. 4, 1908	Columbus.....	Clean.....	.....	250	30	+
200 A	Mar. 6, 1908	Columbus.....	Clean.....	.....	450	27	—
204 A	Mar. 10, 1908	Columbus.....	Clean.....	.....	40	0	—
210 A	Mar. 11, 1908	Columbus.....	Clean.....	.....	15	0	—
215 A	Mar. 12, 1908	Columbus.....	Clean.....	.....	51	3	+
219 A	Mar. 13, 1908	Columbus.....	Clean.....	.....	180	0	—

Average number of bacteria, 144; of acid formers, 9.

WATER ANALYSIS.

(Parts in 100,000.)

Traction Company.	Source.	Lab. No.	Date of Collection.	Odor.	Turbidity.	Sediment.	Ammonia.		Nitrogen as—		Chlorine.	Solids.		Hardness.	Iron.
							Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
T. H., I. & E. to Martinsville.....	Mooreville.....	1550	Feb. 13, 1908	None.	9	None...	.0360	.0090	.0300	.0080	3.2	49.2	39.6	34.8	.20
T. H., I. & E. to Richmond.....	Greenfield.....	1549	Feb. 13, 1908	None.	4	None...	.0340	.0105	.0400	.0100	0.8	33.2	32.2	31.0	.02
T. H., I. & E. to Lafayette.....	Lebanon.....	1546	Feb. 13, 1908	None.	20	Slight...	.0160	.0115	.8000	.0200	2.2	43.4	38.4	32.6	.04
T. H., I. & E. to Danville.....	Indianapolis.....	1536	Feb. 11, 1908	None.	None.	None...	.0060	.0120	.0400	.0010	6.0	44.4	34.4	22.0	.05
Ben Hur to Crawfordville.....	Crawfordville.....	1547	Feb. 13, 1908	None.	4	V. al...	.0020	.0065	.0200	.0001	1.5	43.6	41.6	32.6	.16
I. U. T. Co. to Kokomo.....	Tipton.....	1535	Feb. 11, 1908	None.	None.	None...	.0024	.0090	.0300	.0002	3.8	46.8	34.0	24.5	.01
I. U. T. Co. to Peru.....	Tipton.....	1545	Feb. 13, 1908	None.	9	None...	.0130	.0090	.0800	.0005	4.0	43.0	31.5	30.6	.06
I. U. T. Co. to Muncie.....	Muncie.....	1548	Feb. 13, 1908	None.	9	None...	.0110	.0085	.0100	.0080	6.0	71.4	56.4	29.8	.12
I. C. Co. to Greensburg.....	Shelbyville.....	1538	Feb. 11, 1908	None.	None.	None...	.0010	.0036	.6000	.0001	.....	28.6	21.4	.....	.....
I. C. Co. to Connersville.....	Rushville.....	1579	Mar. 12, 1908	None.	9	None...	.0015	.0065	.8000	.0001	0.6	27.6	24.3	24.0	.02
I. C. S. to Seymour.....	Columbus.....	1580	Mar. 12, 1908	None.	20	Slight...	.0010	.0075	.1500	.0002	0.3	22.2	16.6	16.7	.03
Terminal Station.....	Well.....	1537	Feb. 11, 1908	None.	9	Slight...	.0084	.0070	.0500	.0010	2.5	42.4	31.4	24.3	.07

LABORATORY OF HYGIENE
STATE BOARD OF HEALTH

**Sanitary Condition of Lake Michigan
at Michigan City, Indiana**

THE CHARACTER OF THE WATER SUPPLY OF MICHIGAN CITY, IND.

BY H. E. BARNARD AND J. H. BREWSTER.

For many years the typhoid fever death rate of Michigan City has been higher than it should be, and there is good reason to believe that this has been due largely to the character of the public water supply. Statistics furnished by the Board of Health and given in Table No. 28 show that the typhoid death rate for the 26 years from 1882 to 1907 inclusive has been 43 per 100,000, and while during this time it has varied in different years from 0 to 112, there is also shown a marked increase in the rate from 1903 to 1907 inclusive.

The six years from 1882 to 1887 inclusive show a death rate of 35 per 100,000. The ten years from 1888 to 1897 inclusive show a death rate of 49 per 100,000. The ten years from 1898 to 1907 inclusive have a death rate of 42 per 100,000, and the last five years from 1903 to 1907 inclusive show a death rate of 57 per 100,000. The following table shows the number of years when the typhoid fever death rate has been between certain figures:

<i>Typhoid Fever Death Rate.</i>	<i>Number of Years When this Death Rate Existed.</i>
Below 20	5
Between 20 and 30	2
Between 30 and 40	4
Between 40 and 50	6
Between 50 and 60	5
Between 70 and 80	2
Between 100 and 110	1
Between 110 and 120	1

As a general rule, a continued typhoid death rate above 20 is an indication that something is at fault with the public water supply. The rate for Michigan City has been above this figure every year with the exception of 1898 and 1901, for the last twenty years.

The fact that a decided increase in the number of cases of typhoid fever is observed during the winter, although it is in the

summer months that enteric diseases are usually most common, is a grave suspicion that it is in a measure responsible for this condition. It is shown in the statistics of the local board (see Table 27) that with one or two exceptions there has been more typhoid fever during the months of February, March and April than any other time of the year. The epidemic of 1908 started in January and continued until May. That this condition is largely due to the character of the water supply is without question.

No city can continue to prosper when its water supply is of suspicious quality, and, recognizing this fact, the health officers of Michigan City in the early summer of 1908 requested the State Board of Health to determine the real character of the supply with respect to its present sanitary condition and its probable future quality after the installation of a new intake pipe to supplement the intake now in use.

In accordance with the request of the local health board, on July 13, 1908, the State Board of Health established a temporary bacteriological laboratory at the life saving station at Michigan City, equipped for making colony counts and the presumptive test for *B. coli*. Sampling points in the Lake were located and marked by buoys covering the territory within a two-mile radius of the mouth of the harbor, which is the only source of pollution of the Lake at a point near the city. Sampling points were also established in the river as far as it was navigable up Trail Creek. Samples were taken daily, from July 15 to and including August 5, at points located at the mouth of Rummel ditch, the Fourth Street sewer, the harbor intake, the present water works intake, the new intake, and the intake to the Prison Water Supply. The direction and velocity of the wind and the direction of lake currents were noted daily. The entire investigation involved the collection and bacterial analysis of about 400 samples of water and the report of about 75 chemical analyses taken from the Lake and well supplies. All Lake supplies for bacterial analyses were collected from a water level 10 feet below the surface.

Lake Michigan as a Source of Water Supply.

Lake Michigan is the second in the chain of Great Lakes, and ranks third in size with regard to its drainage area, having 68,100 square miles. As the outlet is comparatively small, relative to the quantity of water it contains, there is no direct flow and the movements of the water are entirely dependent upon local winds, which vastly overbalance the general movement of translation and drive

the water one way or the other according to their direction, velocity and duration. The atmospheric temperature also influences these movements, and near the mouths of large streams these, too, have their effect. Michigan City is located on the southern pocket or lower bay of the Lake and is not influenced by the drainage of any rivers or large sewers with the exception of its own harbor, the sewage of which is carried in one direction or the other as the wind directs the currents.

The friction of the wind blowing over the surface of a large body of water tends to produce a surface current of the water in the same direction, and if the wind continues to blow from one direction a general surface drift of the water in that direction is established. These induced currents may be interrupted at times or even reversed, but as a whole they represent an advance movement in the direction of the prevailing wind. It is the general impression that the prevailing currents are from west to east or counter clockwise along the southern shore of the lake, and water works intakes have been placed with this idea in view as a protection of their water supply. This idea is pronounced a fallacy by W. V. Judson, Major, Corps of Engineers of the War Department, who has found no positive Lake Michigan currents, and after a careful study of the Lake concludes that they run in any direction at any time according to the direct influence of the wind and atmospheric temperature.

It has also been shown that the shore points are affected by counter currents. That is, on-shore winds bring the surface water in, and the shore water washes out, thus forming a direct opposite current. Off-shore currents have the reverse effect, bringing the deep water in and taking the surface water out. Water works intakes that are close to shore are affected by these currents, as they are within the influence of the on-shore winds which bring the most drainage over the intake.

The currents which affect the water intake at Michigan City are principally the local shore currents. The general lake currents rarely get within five miles of the shore, and are often quite the reverse of the shore currents, as the local winds are quite different from the lake winds. The currents are also affected by the government pier and breakwater.

The harbor currents at times seem to have some relation to the lake currents, but at other times they have very little and in fact are quite the opposite. The currents run both into the harbor and out of it, and occasionally there is practically no current at all.

A float placed in the river will often stay for days within a space covering four blocks, going back and forth with the incoming and outgoing currents. During flood times and when off-shore winds are prevailing, the currents will run out of the river at a rate of five or six miles an hour for days at a time. During such periods there is undoubtedly a general scouring of the harbor, which takes out not only the sewage that is at that time running in but also the sewage that has collected in quantities when the current is reversed. At other times under different influences the current will run up the harbor at the rate of four to five miles an hour. During these periods there is practically no sewage entering the Lake. The average outward current for the entire year can therefore only be approximated. The most reasonable figure is about one mile in four hours.

Lake Level at Michigan City.

The records taken during July and August were incomplete observations but serve to show in a general way the effect of the wind on the lake level. Under ordinary conditions of light wind, the lake level does not vary more than a few inches during the twenty-four hours, but during severe storms the fluctuation amounts to nearly a foot. Off-shore winds naturally tend to depress the lake level, while winds blowing toward the shore tend to raise it. Winds blowing from the north tend to raise the level, while the effect of southerly winds blowing off shore varies according to the intensity and duration. If strong northerly winds prevail for some time, the lake level at Michigan City is raised because of the mass of the water in the Lake being driven toward the southern shore. If strong southerly winds prevail for a time, the level of the Lake will be lowered by the water being driven in the opposite direction. The fluctuations of the lake level deserve much more careful study than they have yet received. At Michigan City they are of considerable importance, because they materially effect the flow of the harbor water and the settling of the sewage before it reaches the Lake. Inasmuch as the prevailing wind during July and August was from the north, the lake level was unusually high and the harbor during most of the time held a practically stagnant body of water, thus allowing most of the sewage to settle out and also giving the pathogenic organisms opportunity to die, so that when changes of wind did occur very few bacteria and but small amounts of organic matter entered the Lake, although there was a lowering of the water level at the mouth of the harbor of about one foot.

Then, again, the abnormally high lake level greatly hindered the unusually small amount of sewage caused by the extreme dry weather from reaching the Lake. The report of the United States Lake Survey shows that during this period Lake Michigan had the highest July stage since 1888, when the water was half a foot higher. It was eight inches above the average July stage of the past ten years, two and three-fourth inches higher than last year and twenty-two and three-fourth inches higher than in 1896. But in 1886 the water was higher by nineteen and three-fourths inches.

Quality of Water of Lake Michigan.

The water of the Great Lakes is generally clear and colorless, with little organic matter present, either in suspension or in solution, and of comparatively low bacterial count.

The water is low in sulphates and chlorides and relatively high in carbonates. It is subject to very small variations in mineralization, although the constantly increasing volume of sewage being poured into the Lake is slowly but surely raising the chlorine, sulphate and nitrate content. The present chemical composition of the water, as given by R. R. Dole of the United States Geological Survey, is as follows:

	<i>Parts Per Million.</i>
Turbidity	Trace
Silica	10.0
Iron	0.04
Calcium	25.0
Magnesium	8.2
Sodium and potassium	4.7
Carbonate radicle	2.9
Bicarbonate radicle	112.0
Sulphate radicle	7.2
Nitrate radicle	0.3
Chlorine	2.7
Total solids	118.0

The chemical composition of the water as determined at the State Laboratory of Hygiene for the purpose of arriving at its sanitary value is shown in Table No. 24.

Lake Michigan is very shallow along the shore bordering Indiana, and is at certain times rendered more or less turbid by reason of the deposits of clay at the bottom being stirred up by the wind and currents.

The character of a water for drinking and domestic purposes depends very largely upon its freedom from organic pollution, especially in the form of household sewage. As to this point, the water of Lake Michigan in its normal state approaches absolute purity, and where supplied in this condition its quality is unquestionable. But as the water intakes are close to shore and in many instances also near the outlet of the public sewer, it becomes necessary to determine whether or not the sewage that enters the Lake is carried to the intake of the water supply in order to know the true character of the city water.

Location and Water Front of Michigan City.

Michigan City is the most eastern Indiana city on the southern pocket of Lake Michigan, St. Joe, Michigan, being the nearest city along the eastern shore and Gary on the west. The city is built entirely on sand, the shore being bordered by immense sand hills and dunes, among which is the noted Hoosier Slide.

The lake bottom is principally sand, although there are many outcroppings of clay covering small areas which are so situated that they are constantly scoured clean by incoming and outgoing currents. The lake bottom slopes very gradually from the shore, and two and one-half miles out the water averages 55 feet in depth. No point within this area has shown a greater depth of water than 63 feet. Because of the force of storms, which sweep down from the north, carrying the lake water before them, the surf is very heavy at certain periods of the year, and this influence has its effect on the lake bottom, as is shown by gulying and rolls in the sand-bed, which, however, are shallow and of little significance.

The harbor, so called, is the dredged out channel of a small stream known as Trail Creek, and for some two miles its shores are utilized for dockage purposes. There are several manufacturing plants and lumber and coal yards along the harbor which do some shipping by water, and the channel is therefore kept open for vessels drawing not more than 15 feet of water.

At the mouth of the harbor the government has constructed piers into the Lake, one either side about one-half mile long. In front of the harbor mouth there is a breakwater parallel to the shore line which encloses the harbor. The harbor can be entered from either the east or west side of the breakwater. Inside this harbor dredging is frequently necessary, and the material which is dredged is used either to fill in dockage or is taken into the Lake and dumped into the water. At the mouth of the harbor the chan-

nel is 20 feet in depth, but the average depth is 18 feet and its width approximately 208 feet. The harbor receives all the sewage of the city through the Fourth Street sewer and Rummel ditch. At the entrance of the Fourth Street sewer the channel is 12 feet deep and 125 feet wide. At the point where the sewer enters the harbor is a shallow turning basin about 200 feet wide and averaging seven feet in depth. There is also a turning basin which marks the end of the harbor a short distance above the electric power station. Here the water is only three or four feet deep. Rummel Ditch enters Trail Creek about a mile and one-half above this point.

The bottom of the harbor is heavy clay, but because of the continual deposition of organic matter from the sewer and of silt brought down by Trail Creek, it is its entire length a mass of ooze in some places 10 feet deep.

The Water Supply of Michigan City.

The water supply of the city is derived from the Lake except at times when the intake becomes clogged with ice and harbor water is used. The old or present intake of the water works is located 3,732 feet from the shore and 3,700 feet from the mouth of the harbor. The main is 24-inch iron pipe with an opening upward "L" at the end to prevent the sucking in of sand from the lake bottom. The depth of the Lake at this point is forty feet. In order to supply a greater quantity of water and at the same time for the purpose of securing water of better quality, a new water works intake is now under construction. The line now being laid is a 30-inch steel main, which will extend 4,300 feet into the lake and have its intake about 600 feet from the present intake. This is supposed to be sufficiently large to carry all the water needed by the city for years to come. It will be placed in 50 feet of water, and in this depth of water it is expected that there will be no trouble from needle ice, but if the main should become clogged the old intake can be used while the ice is being removed, and the use of the harbor intake dispensed with entirely. The mouth of this main is to be an eight-sided, wooden rip-rapped crib, surrounded by quarry stone. The top of the crib is to be open, and if it should become clogged with ice, water will still be supplied through the sides of the crib.

The harbor intake is directly back of the water works and is a 16-inch line which is used only when the lake main becomes stopped with needle ice. When this occurs, harbor water is pumped back through the main to clean it, and during the time of cleaning the

harbor water is pumped direct through the mains, sometimes for 15 hours, or as long as is required to clean the main. The fact that the harbor water is grossly polluted, as is shown in any table from No. 1 to No. 22, at sampling point "E" explains the recurring epidemics of typhoid fever and enteric disturbances which have followed its use. On account of the large number of shallow wells and dry vaults, the epidemic from this one usage of harbor water may continue for several months.

The pumping station is equipped with two four million-gallon Holly pumps with a total pumping capacity of eight million gallons daily. The average daily consumption at present is about four and one-half million gallons, or 225 gallons per capita. The water works has no storage reservoir or standpipe, as the water is taken from the Lake and delivered to the consumer by direct pressure. The system contains at present about seventeen and one-half miles of water mains.

The water is sold on a flat rate, and the charges are extremely low in comparison with those of other cities of the same size. The rate for common hydrant is two dollars per annum, and for common hydrant and garden privileges is six dollars per annum.

The prison water works intake is located 3,800 feet from the shore and 5,800 feet west of the mouth of the harbor in 30 feet of water. The main is of steel thirty-six inches in diameter. This water works system is owned and operated by the prison and supplies water exclusively for prison usage.

Local Sources of Pollution.

The chief local sources of pollution of the water of Lake Michigan in the vicinity of Michigan City are:

- (1) The discharge of the harbor water into the Lake.
- (2) The shore wash and the stirring up of the bottom of the Lake by winds and currents.
- (3) The dumping of dredged material.
- (4) Accidental pollution by steamboats, sailing vessels and other shipping.
- (5) Disturbance of the bottom by sand suckers.

The Sewage of the City.

All of the sewage of the city goes into the Lake indirectly by the way of Trail Creek and the harbor.

It consists of the domestic sewage and trade waste of the entire population of about 21,000, the city population being about 20,-

000 and that of the State Prison about ten or eleven hundred. The sewage system is divided into two parts, one of which, known as the Fourth Street sewer, takes in about one-half the city and the prison sewage and empties directly into the harbor, and the other, known as Rummel Ditch, which, together with the Ripley Street sewer, covers the rest of the city and empties into Trail Creek about three and one-half miles above the mouth of the harbor.

The Fourth Street sewer discharges approximately 800 cubic feet or 6,000 gallons of sewage per minute into the harbor. Besides the domestic sewage and ordinary trade waste that it carries, it contains the refuse and tarry residues from the gas plant, a large deposit of which is found in the basin into which the sewer discharges. The current here is so sluggish that the sewage immediately settles and septic action can be seen at almost any time, both above and below the mouth of the sewer, a positive indication that sewage is carried upstream during the times when the harbor current is reversed.

Rummel ditch is simply an open ditch running through the south side of the city. During rainy seasons it carries the storm water for a large section of the country lying west of the city, but ordinarily it has almost no flow except a small stream of sewage, and there are times during dry seasons when the ditch goes entirely dry. At such times sewage that runs into the ditch collects in pools in the low spots, where the water seeps into the ground or evaporates, leaving a large percentage of the solid and organic matter to decay in the open air. The land is thickly populated on both sides of this ditch, and there are instances where it runs directly under the houses. During dry seasons the odor from Rummel Ditch is very pronounced and offensive to the entire adjacent community. An excellent opportunity is afforded for flies to carry disease-producing bacteria from this stagnant pool to the tables of the families that live along the banks. Rummel Ditch is also a breeding ground for myriads of mosquitoes. This ditch is an abomination, an archaic survival of medieval ignorance and tolerance, and its continued use as a sewer a reproach to the city.

The Ripley Street sewer is a small sewer running nearly parallel to Rummel Ditch, which receives the sewage that does not run into the ditch from the south side of the grade which gives the city its two distinct drainage systems, and drains into Rummel Ditch only a short distance before it empties into Trail Creek.

Rummel Ditch discharges approximately 600 cubic feet or 4,500 gallons of sewage per minute into Trail Creek.

Trail Creek also receives the drainage of the land lying east of the city, which is practically nothing but storm water. Its discharge is about 20,000 cubic feet or 150,000 gallons per minute.

Shore Wash and the Stirring Up of the Bottom.

During storms and windy weather the bottom is stirred up by wave action, and suspended matter is carried back and forth between the shore and water intake. At such times any deposits along the shore are carried out either by direct currents or by counter currents in reverse winds, and materially increase the turbidity of the water. While such material is usually innocuous, yet it occasionally renders the water so turbid as to be unsatisfactory for drinking purposes.

The Dumping of Dredged Material.

If any of the material removed from the bottom of the harbor by dredges engaged in cleaning or deepening the channel is carried out by scows and dumped into the Lake near the water intake or at such points that particles held in suspension are carried near the intake by wind and wave action, the character of the water supply is endangered and a serious pollution becomes possible. The dumping of all material removed from the harbor should not be allowed within a distance of three miles from shore.

Accidental Pollution from Boats.

All boats entering the harbor from the west go within a half mile of the water works intake, and boats coming from the east go within a short distance of it, not infrequently passing directly over it. The Roosevelt and other large boats carrying excursion parties out from Michigan City pass close to the intake as often as twice in one hour. Fishing boats and scows pass even nearer than these larger boats. These boats, some of which carry 3,000 passengers, have toilet facilities which discharge directly into the water, and when such numbers of passengers are on board they are constantly in use. While it is probable that pollution of the water supply by these boats is not greatly to be feared, yet it is entirely possible for the dejecta of a typhoid convalescent to be poured into the Lake within a short distance or even directly over the water intake.

This accidental pollution, unfortunately, is beyond the control of the city. Federal legislation and supervision is needed to protect this and other water works supplies from such possibilities of

contamination, and any measure, such as the creation of a zone around water intakes over which shipping cannot pass, that will protect the water consumer is both wise and necessary legislation.

Disturbance of Bottom by Sand Suckers.

Boats desiring certain grades of sand frequently go within a few hundred feet of the water intake and suck the bottom sand into their boats. This work disturbs the lake bottom and large quantities of suspended matter can be seen for over a mile in the lake water. All work of this kind should be kept far enough away from the intake that there may be no possibility of the disturbance reaching the city supply and damaging the quality of the water.

Factors Which Affect the Self-Purification of Lakes.

There are several factors which tend to protect the water supply of the city against the pollution which the Lake receives.

First, there is the natural dilution of the small amount of sewage by the great volume of lake water which receives it and with which it is thoroughly mixed. The velocity of the current discharging into the Lake is so slight that it immediately diffuses throughout the surrounding mass of pure water, and in a short time the original body of polluted water is so infinitely diluted as not to be detected by any change in the character of the lake water. However, as there are several offsetting influences to the process of dilution, no computed table can be used for the purpose of determining the time or distance factor necessary to destroy all danger of pollution. Principal among these influences are currents caused by the wind and piers and breakwaters which deflect a natural current in an opposite direction.

Second, the natural death of the pathogenic organisms affords a great protection to the purity of the Lake. Inasmuch as there is practically no food in the pure water for these bacteria to live on, they gradually die instead of multiplying, as they would under the same conditions of temperature in a more suitable media. Just how long these organisms will live it is impossible to say, but it is reasonable to believe that they will exist for several weeks under favorable conditions.

Third, there is the process of sedimentation. When the water is comparatively quiet there is a very rapid settling of the suspended matter, the organic constituents and bacterial life. This leaves the surface water, which is the first to be carried by the

winds, to pass on as a comparatively good water. This sedimentation may be disturbed again if the wind and wave action is great enough to reach the bottom, under which conditions the pollution becomes even more concentrated than it was originally.

Fourth, sunlight acts as an efficient sterilizing agent upon bacteria. Such action takes place very rapidly at the surface of the water, and as vertical currents are constantly bringing new layers of water within the influence of the sun's rays, the aggregate effect of sunlight upon a mass of polluted water is to diminish greatly the bacterial content. Strong agitation and aeration, such as may be effected by storms, do not materially improve the sanitary quality of a water.

Well Water As a Source of Supply.

It is commonly supposed that any water taken from the ground is a suitable water for drinking and domestic purposes so long as it is clear, cold and sparkling.

That this idea is a fallacy is shown by the analysis of water from the wells of Michigan City. Even though these wells are sunk in an excellent bed of filtering material, they are just as heavily polluted as wells in other cities where water comes from more unfavorable surroundings. There are some wells in the lightly-populated sections that furnish water of good quality. On the contrary, waters collected in other parts of the city show heavy pollution by sewage, and are not suitable for drinking and domestic purposes. As is shown in table No. 25, of twenty-eight wells that are used for drinking and domestic purposes, sixteen may be considered of good quality, while ten are of bad and two are of doubtful character. These results show that nearly half of the wells that have been analyzed are not safe for drinking and domestic purposes. If the wells examined were representative of the well supply, then about one-half of all the wells in the city should be closed. Furthermore, it cannot be determined how long it will be before many of the wells that are now potable will become foul and unfit for use.

Wells that are located near and on either side of Rummel Ditch are especially to be suspected, for during seasons when the ditch is practically dry the sewage that enters the creek seeps through the ground along lines of least resistance, and as wells are draining the surrounding land, they are apt to receive this sewage infiltration.

In general, if a wholesome water for a public supply can be obtained, it is to be preferred by far to the domestic well.

Chemical Survey of Michigan City Water Supply.

As shown in table No. 24, the analyses of city water taken from the city taps gives markedly different results at different times in the solid contents, the nitrogen contents, chlorine and alkalinity. This is undoubtedly due to the pumping of harbor water at the periods of bad analyses. It is recorded in the superintendent's records that harbor water was used in 1908 on January 17th for nine hours, on January 24th for twelve hours and on February 21st for fifteen hours.

Chemical analysis No. 1512, table No. 24, of a sample of water that was submitted to the State Laboratory for examination on January 17, 1908, shows abnormally high solid contents, free ammonia, chlorine, alkalinity, iron and the presence of *B. coli*.

Analysis No. 1948, table No. 24, of a sample of water collected on July 21, 1908, in the harbor at the inlet of the harbor water intake, so closely resembles analysis No. 1512 in every constituent above mentioned that without reference to the record books it is clearly seen that nothing but harbor water was being delivered through the mains. It also shows that there is very little change in the composition of the harbor water from one season to another.

A series of analyses made on July 21, 1908, analyses Nos. 1947, 1948, 1950, 1951, table No. 24, of samples taken from the mouth of the harbor intake, the mouth of the harbor, the east end of the breakwater and one mile out into the Lake, shows clearly that very little of the harbor water was getting into the Lake. The sample taken at the mouth of the harbor shows a distinct falling off in all the solid contents and also in the free ammonia and nitrites, chlorine and alkalinity, although bacilli of the colon type are still present. The sample from the east end of the breakwater closely resembles that taken at the mouth of the harbor in all its chemical constituents, the only marked difference in the two analyses being the absence of *B. coli* in the breakwater sample. It is further shown by the analysis of a sample taken one mile from the harbor which very closely resembles water from both the east end of the breakwater and the mouth of the harbor, that the harbor acts as a complete sedimentation basin where the water is materially changed in character before entering the Lake. It must also be admitted that this condition will not exist during flood times when Trail Creek is discharging the runoff of its drainage area through the harbor and thus flushing it of all accumulated sediment.

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Bacteriological Survey of Lake Michigan, Near Michigan City.

In order to know where the sewage came from and where it went, it was necessary to take samples of water at all the sewer outlets and at intervals between these sources of pollution and the Lake, and then to take samples at regular distances in every direction as far as the pollution could be traced. The sampling points are indicated on the accompanying map. Samples from all the points were collected and analyzed on nineteen days during a period of one month.

A comparison of the results obtained on different days shows practically no change in the composition of the samples from the Lake during that time. The only change of importance was the variation in bacterial counts observed at the mouth of the harbor which fluctuated according to the flow of the harbor current. The character of the harbor water, on the contrary, showed decided differences depending upon the direction of the current in the harbor. Table No. 8 shows 66,000 bacteria at point C at the Sixth Street bridge, while only 4,000 were found at point D, which is the Fourth Street sewer. Table No. 11 shows point C with 33,000, while point D has 25,000. Table No. 13 shows point C, 90,000, while point D has 80,000. Table No. 19 shows point C with 65,000, while point D has 50,000. Table No. 22 shows points C and D with the same bacterial counts. These analyses show clearly that the sewage from the Fourth Street sewer is taken above the sewer and deposited with up-stream currents, and under such conditions does not reach the Lake. In every case the counts at point B, which is at the turning basin above point C, are low and indicate the impossibility of the pollution at the Sixth Street bridge originating up stream.

In tables Nos. 10, 12, 15, 16, 17, 18, 20 and 21, point C has a lower count than point D, a proof that on these days the harbor current was running down stream. Even on these days, in every case the bacterial count at point C was much higher than point B showing that the pollution from the Fourth Street sewer still remained at this point.

All bacterial counts at point A, the first point in Trail Creek below the entrance of Rummel Ditch, are very low, showing that no sewage was entering the harbor from this sewer. Such results were to be expected as Rummel Ditch was dry during the entire period of observation.

Point E, which is back of the water works, in every case shows

a decided decrease in the number of bacteria from that at point D. Point F also shows the same proportional decrease from point E. These results verify the chemical analysis in showing that the harbor acts as a settling basin and that under conditions such as obtained during the test practically none of the sewage enters the Lake. Table No. 22, points A, B, C, D, E, F, G and H, in the average column, shows the reduction and settling out of the bacteria and sewage from the time it enters the harbor until it reaches the Lake, the total decrease being from 52,500 at the Fourth Street sewer to 40 at the east end of the breakwater.

At different times the sampling around the mouth of the harbor showed an increase in bacteria over normal, evidently due to the wind and current directing the normal harbor outflow. Point I, which is just outside of the west pier at the mouth of the harbor, has a variance in bacterial count from 600 to 5, the average being 100, colon bacilli being present 31% of the time. The high bacterial count at this point was noted when the wind and current was from the southeast, east, northeast and occasionally from the north. These conditions will be found in tables Nos. 5, 8, 13, 15, 17 and 21. In these same tables the counts at points Y and Z are much lower and are, in fact, practically normal, *B. coli* being absent in every case at these points, while it was always present at point I.

Winds and currents from the south, west, northwest and occasionally from the north, gives practically normal lake counts at point I, while points Y and Z give slightly higher counts, but are at the same time only slightly above normal with the exception of the date shown in table No. 16, when point Z had 135 bacteria and contained *B. coli*, while point I had but 35 and no *B. coli*. These results will be noticed in tables Nos. 7, 16, 18 and 19.

In several cases, with variable winds from all points of the compass, the sampling points at the mouth of the harbor show practically a normal lake water. Such results will be found in tables Nos. 10, 11, 12 and 20.

With but one exception, point J showed a normal lake water every day during the test. On July 29th, shown in table No. 15, with the current running from the northeast to southwest, the bacterial count at point J was 230, with *B. coli* present. On this date the sewage was carried to point K, which had 260 bacteria with *B. coli* present, and also to point L, where 75 bacteria were found, a count which is abnormally high for this point.

On account of not having any strong west winds and currents

during the test, the points east of the harbor at no time showed high bacterial counts. All other lake points, including the prison intake, the present city intake and the new intake, give an absolutely safe and wholesome water throughout the entire test. The deep lake points many times show a sterile water and constantly show very few bacteria. It is shown conclusively by the analyses that the sewage is destroyed before it reaches the Lake, in no case getting outside of the breakwater. It must, however, be remembered that this test will answer only for periods of the year that have the same weather conditions as were encountered during the period when the test was being carried on.

Conditions Under Which Test Was Made.

At no time during the test or for some time prior to July 15th did rain fall in this section of the State. For this reason Rummel Ditch, which, together with the Ripley Street sewer, drains about one-half the city, was not delivering any sewage at all into Trail Creek. The Fourth Street sewer was delivering a much smaller amount of sewage than under ordinary conditions when storm water is entering. With the entire sewer system running approximately less than one-half the normal sewage flow, the bacterial count at any point in the harbor was far below what may be expected under other conditions. The extremely high level of the Lake, together with a prevailing north wind, which is exceptional for the summer months, does not give an opportunity for the sewage to get into the Lake as it would under different or more nearly normal conditions. The prevailing strong north winds kept the sewage in and around the mouth of the harbor instead of allowing it to enter the Lake to where it might be carried by local currents in direction of the water intakes. At no time while the investigation was under way was there any strong west wind which would form currents from the west, and so direct sewage coming from the harbor toward the water works intake.

Because of the exceptional conditions obtaining throughout the entire period of the investigation, the character of the water at the city and prison intakes was as good as it could ever be expected to be, and therefore the results of the investigation cannot be accepted as conclusive proof that the water will at all times and under adverse conditions continue to be potable.

The conditions under which the examination was conducted are in that respect unfortunate in that they have not established the entire safety of the supply, but the results in other respects are

extremely valuable since they show positively that Lake Michigan water at Michigan City is not yet affected by the large volume of sewage and manufacturing waste which is pouring into it at Chicago and throughout the Calumet region, and which is making of the Lake at those points an enormous pool of dilute sewage, unfit for drinking within five miles of the shore.

The water at many of the sampling points was practically sterile, and was constantly in a normal condition.

So long as the Lake remains in its present state of purity, Michigan City will have at her door a vast reservoir of soft, potable water suitable for all domestic and manufacturing uses without treatment of any kind. The value of this natural resource to Michigan City can hardly be estimated. It is unquestionably the city's greatest civic asset, and for the sake of her future material welfare and the health of her citizens it must be preserved in its present potable condition.

Recommendations.

It is recommended that the harbor intake be abandoned and the pipe or a section of it be removed.

It is recommended that the character of the water at the present and new intakes be studied under unfavorable conditions, such as will obtain when heavy storms and rainfalls scour out the harbor and allow the unpurified sewage to enter the Lake.

It is recommended that all shallow wells be abandoned and closed unless their purity is established by frequent sanitary analyses.

It is further recommended that the present sewer system be so extended and improved that all household and domestic sewage is rendered innocuous by suitable treatment before allowing it to enter the harbor and Lake.

Respectfully submitted,

H. E. BARNARD,

Chemist to the State Board of Health.

J. H. BREWSTER,

Water Chemist.

**LABORATORY OF HYGIENE
STATE BOARD OF HEALTH**

**Charts and Tables Accompanying
Michigan City Survey**

Chart No. 1.

Michigan City, Ind.

Diagram Showing Bacterial Counts Between Trail Creek and The Lake.

July 15, 1908 To August 6, 1908.

Sampling Points.

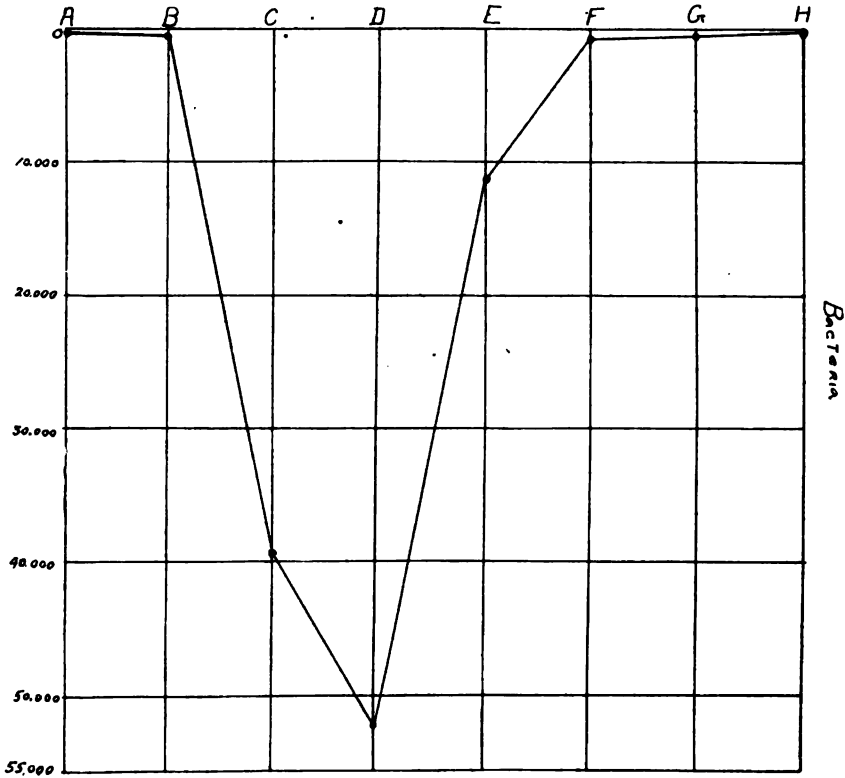


Chart No. 2.
Michigan City, Ind.
 Diagram showing Average Bacterial Count Per cc. in Lake Michigan Water.
 July 15-1908 To August 6-1908.
 Sampling Points.

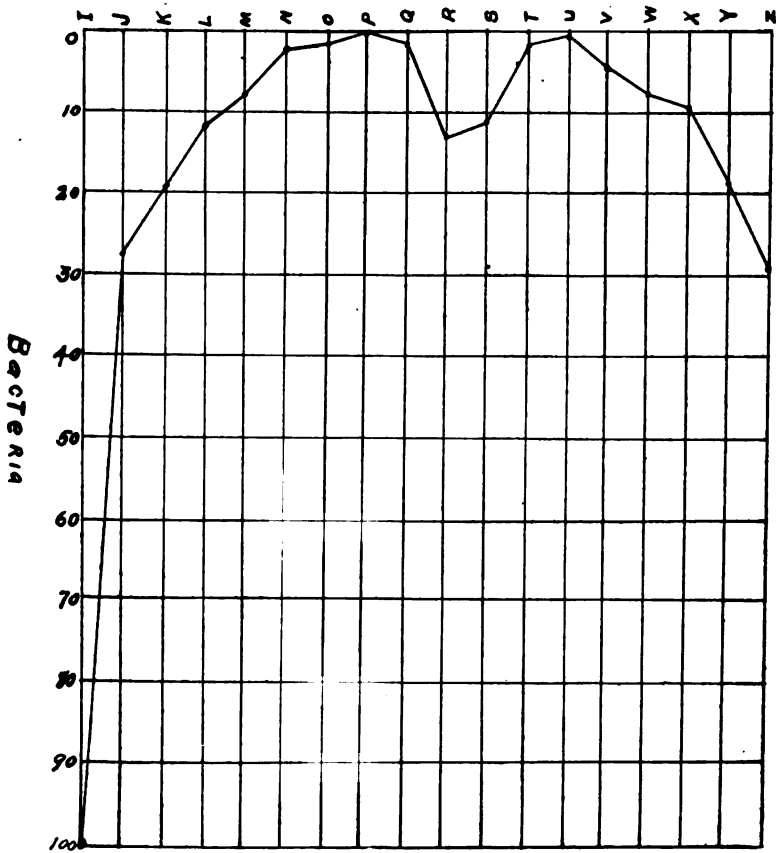


CHART No. 3.
 Michigan City, Ind.
 Diagram Showing The Typhoid Death Rate per 100,000.
 1882 To 1905.

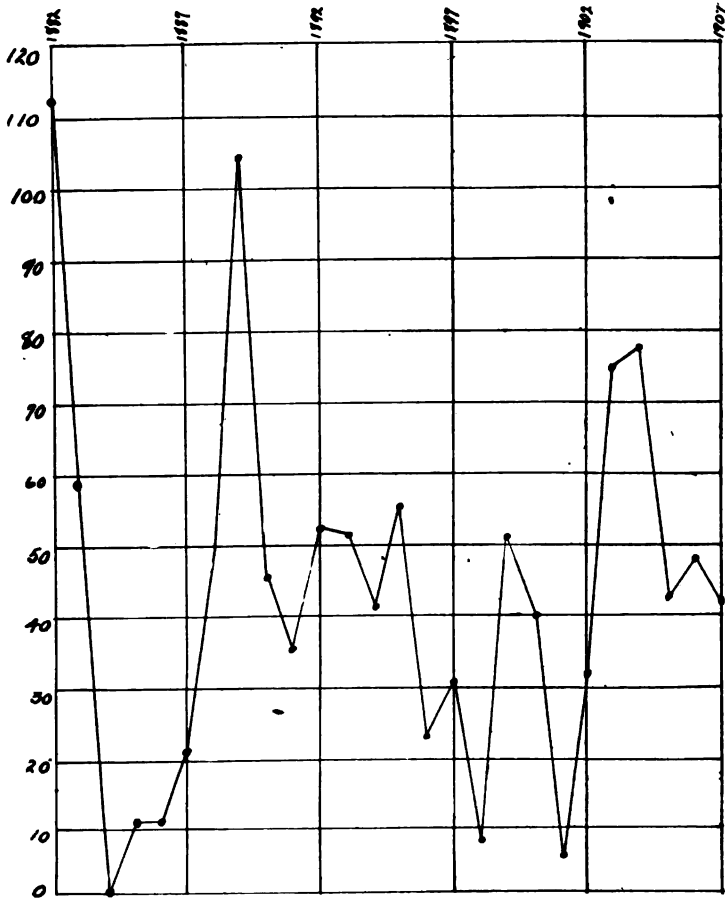
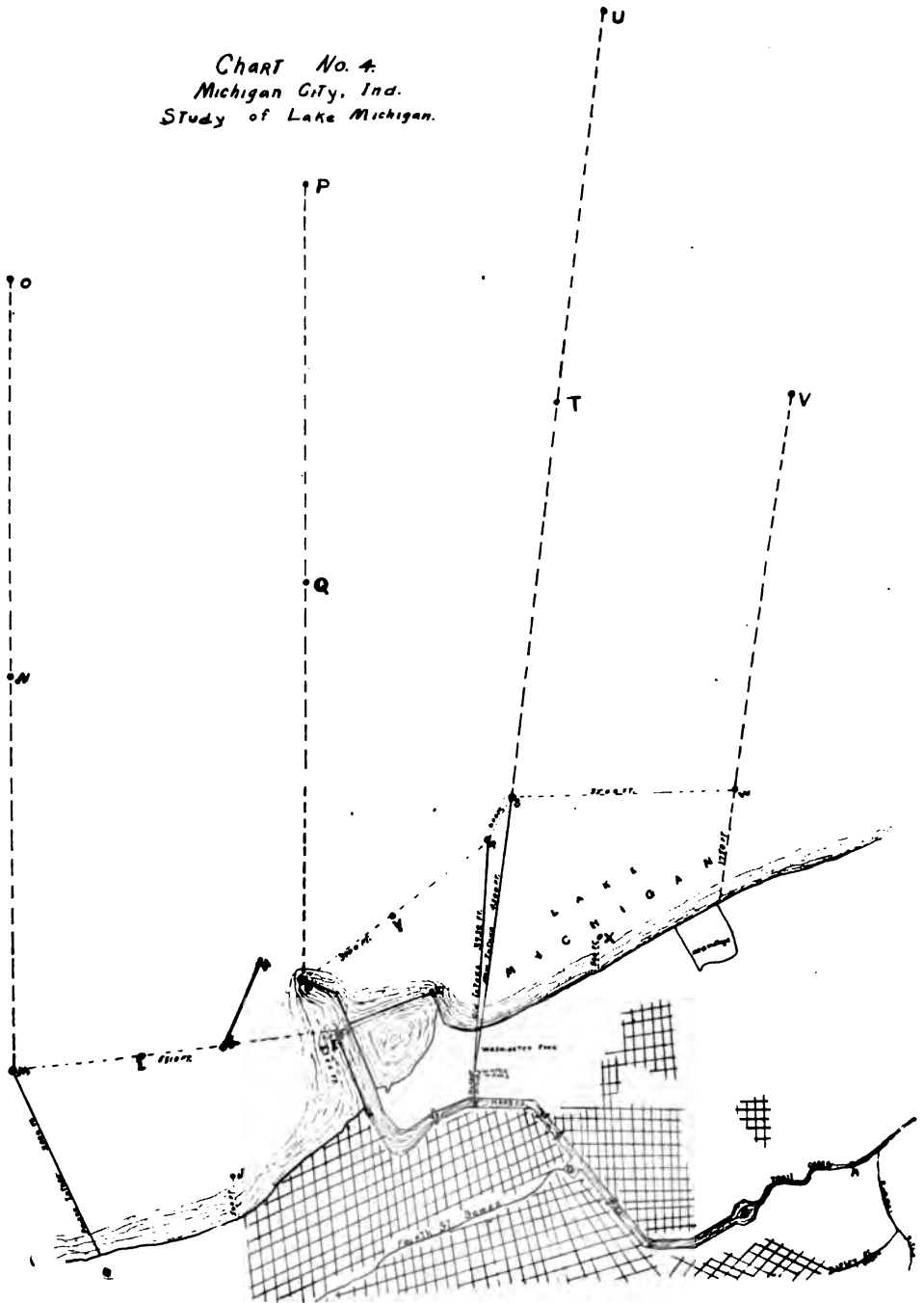


CHART No. 4.
Michigan City, Ind.
Study of Lake Michigan.



KEY OF SAMPLING POINTS.

- A. Trail Creek. Three miles from mouth of Harbor.
- B. Trail Creek. At the last turning basin.
- C. Harbor. At Sixth Street Bridge.
- D. Harbor. Mouth of Fourth Street Sewer.
- E. Harbor. Mouth of Harbor Intake.
- F. Mouth of Harbor at small lighthouse.
- G. Mouth of Harbor at Fog Horn.
- H. East end of Breakwater.
- I. Small lighthouse outside of Harbor.
- J. 500 feet from shore off of Kentucky Street.
- K. West end of Breakwater.
- L. Half way between west end of Breakwater and the Prison Intake.
- M. Prison Intake.
- N. One mile out from Prison Intake.
- O. Two miles out from Prison Intake.
- P. Two miles out from Fog Horn.
- Q. One mile out from Fog Horn.
- R. Old Intake.
- S. New Intake.
- T. One mile out from New Intake.
- U. Two miles out from New Intake.
- V. One mile out from Hermitage.
- W. Two thousand feet out from Hermitage.
- X. Five hundred feet out from Center Street.
- Y. Half way between Fog Horn and Old Intake.
- Z. Eastern end of Breakwater out from Bathing Beach.

TABLE No. 1.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 15, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
E.	423 A.	2300	+	
F.	424 A.	170	+	
H.	425 A.	6	—	
K.	426 A.	90	+	Wind northeast light.
M.	427 A.	4	—	
N.	428 A.	2	—	Lake smooth.
O.	429 A.	0	—	
P.	430 A.	0	—	
Q.	431 A.	2	—	Current northeast to southwest.
R.	432 A.	2	—	
S.	433 A.	4	—	
T.	434 A.	3	—	
U.	435 A.	2	—	
V.	436 A.	10	—	
W.	437 A.	18	—	

TABLE No. 2.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 16, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
E.	438 A.	2200	+	
F.	439 A.	160	+	
H.	440 A.	80	+	Wind south, fresh.
K.	441 A.	15	—	
M.	442 A.	3	—	Lake choppy.
N.	443 A.	1	—	
O.	444 A.	0	—	
P.	445 A.	0	—	
Q.	446 A.	2	—	Current southeast to northwest.
R.	447 A.	6	—	
S.	448 A.	4	—	
T.	449 A.	1	—	
U.	450 A.	2	—	
V.	451 A.	0	—	
W.	452 A.	1	—	

TABLE No. 3.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 17, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
E.	453 A.	7900	+	Wind southwest, high.
F.	454 A.	4000	+	
H.	455 A.	12	—	
K.	456 A.	15	—	
M.	457 A.	6	—	Lake rough.
N.	458 A.	0	—	
O.	459 A.	3	—	
P.	460 A.	0	—	
Q.	461 A.	2	—	Current southwest to northeast.
R.	462 A.	14	—	
S.	463 A.	41	—	
T.	464 A.	3	—	
U.	465 A.	5	—	
V.	466 A.	5	—	
W.	467 A.	8	—	

TABLE No. 4.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 18, 190

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
E.	468 A.	4000	+	
F.	469 A.	2500	+	Wind north, moderate.
H.	470 A.	50	—	
K.	471 A.	30	—	
M.	472 A.	2	—	Lake very rough.
N.	473 A.	8	—	
O.	474 A.	0	—	
P.	475 A.	2	—	
Q.	476 A.	0	—	
R.	477 A.	12	—	
S.	478 A.	7	—	Current north to south
T.	479 A.	0	—	
U.	480 A.	0	—	
V.	481 A.	3	—	
W.	482 A.	8	—	

TABLE No. 5.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 20, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
E.	483 A.	66200	+	
F.	484 A.	2000	+	
H.	485 A.	9	—	
K.	486 A.	65	—	Wind southeast, light.
M.	487 A.	20	—	
N.	488 A.	6	—	Lake smooth.
O.	489 A.	4	—	
P.	490 A.	0	—	
Q.	491 A.	4	—	Current southeast to northwest.
R.	492 A.	33	—	
S.	493 A.	17	—	
T.	494 A.	13	—	
U.	495 A.	1	—	
V.	496 A.	4	—	
W.	497 A.	25	—	

TABLE No. 6.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 21, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
E.	498 A.	4500	+	Wind southwest, light.
F.	499 A.	200	+	
H.	500 A.	30	—	
K.	501 A.	42	+	
M.	502 A.	2	—	Lake smooth.
N.	503 A.	17	—	
O.	504 A.	3	—	
P.	505 A.	3	—	
Q.	506 A.	25	—	Currents south to north
R.	507 A.	15	—	
S.	508 A.	9	—	
T.	509 A.	3	—	
U.	510 A.	5	—	
V.	511 A.	3	—	
W.	512 A.	28	—	
*	513 A.	36	—	
**	514 A.	28	—	

*City tap at Staigers' store.

**City tap at City Drug Store.

TABLE No. 7.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 22, 1908.

Sampling PWint.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
E.	515 A.	4000	+	Wind north, fresh
F.	516 A.	300	+	
G.	517 A.	28	—	
H.	518 A.	4	—	
I.	519 A.	7	—	
J.	520 A.	1	—	
K.	521 A.	3	—	
L.	522 A.	5	—	
M.	523 A.	3	—	
N.	524 A.	0	—	Lake choppy
Q.	525 A.	1	—	
R.	526 A.	0	—	
S.	527 A.	2	—	
T.	528 A.	0	—	
V.	529 A.	2	—	
W.	530 A.	3	—	Current north to south
Y.	531 A.	2	—	
Z.	532 A.	35	+	
*	533 A.	3	—	

*City tap at Michigan Central Depot

TABLE No. 8.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 23, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
C.	534 A.	68000	+	Wind northeast, light.
D.	535 A.	4000	+	
E.	536 A.	2000	+	
F.	537 A.	400	—	
G.	538 A.	85	—	
H.	539 A.	30	—	Lake smooth.
I.	540 A.	150	+	
J.	541 A.	3	—	
K.	542 A.	80	+	
L.	543 A.	20	—	
M.	544 A.	28	—	Current northeast to southwest.
N.	545 A.	5	—	
Q.	546 A.	7	—	
R.	547 A.	8	—	
S.	548 A.	15	—	
T.	549 A.	4	—	
W.	550 A.	3	—	
X.	551 A.	20	—	
Y.	552 A.	18	—	
Z.	553 A.	45	—	
*	554 A.	20	—	

*City tap at Second Street Fountain.

TABLE No. 9.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN CITY WATER TAKEN FROM HYDRANTS AT THE DEAD ENDS
OF CITY MAINS, JULY 23, 1908.

Sampling Points.	Laboratory Number.	Bacteria.	B. Coli.
Willard Ave. and Fourth St.....	555 A.	40	—
Ohio and Ripley.....	556 A.	20	—
Tennessee and William.....	557 A.	4	—
Kentucky and Ripley.....	558 A.	28	—
Elston and Barker.....	559 A.	12	—
Ann and Wabash.....	560 A.	5	—
York and Barker.....	561 A.	15	—
Franklin and Earl Road.....	562 A.	12	—
Williams and Washington.....	563 A.	30	—
Pine and William.....	564 A.	18	—
Spring and Detroit.....	565 A.	22	—
York and Park.....	566 A.	6	—

TABLE No. 10.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 24, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
C.	567 A.	3000	+	Wind northeast, light.
D.	568 A.	50000	+	
E.	569 A.	2000	+	
F.	570 A.	250	+	
G.	571 A.	110	—	
H.	572 A.	60	—	Lake smooth.
I.	573 A.	12	—	
J.	574 A.	8	—	
K.	575 A.	35	—	
L.	576 A.	9	—	
M.	577 A.	4	—	Current northeast to southwest.
N.	578 A.	3	—	
Q.	579 A.	1	—	
R.	580 A.	13	—	
S.	581 A.	11	—	
T.	582 A.	0	—	
W.	583 A.	2	—	
X.	584 A.	3	—	
Y.	585 A.	12	—	
Z.	586 A.	20	—	

TABLE No. 11.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 25, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
C.	587 A.	33000	+	Wind southeast, light.
D.	588 A.	25000	+	
E.	589 A.	3500	+	
F.	590 A.	550	+	
G.	591 A.	87	+	
H.	592 A.	95	+	Lake smooth.
I.	593 A.	30	—	
J.	594 A.	5	—	
K.	595 A.	35	—	
L.	596 A.	4	—	
M.	597 A.	0	—	Current southeast to northwest.
N.	598 A.	0	—	
Q.	599 A.	0	—	
R.	600 A.	6	—	
S.	601 A.	8	—	
T.	602 A.	2	—	
W.	603 A.	3	—	
X.	604 A.	4	—	
Y.	605 A.	11	—	
Z.	606 A.	10	—	

TABLE No. 12.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 27, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
C.	607 A.	43000	+	Wind north, light.
D.	608 A.	60000	+	
E.	609 A.	3000	+	
F.	610 A.	800	+	
G.	611 A.	600	+	
H.	612 A.	12	—	Lake smooth.
I.	613 A.	8	—	
J.	614 A.	6	—	
K.	615 A.	9	—	
L.	616 A.	0	—	
M.	617 A.	1	—	
N.	618 A.	0	—	
Q.	619 A.	0	—	
R.	620 A.	5	—	
S.	621 A.	4	—	
T.	622 A.	2	—	Current southeast to northwest
W.	623 A.	3	—	
X.	624 A.	1	—	
Y.	625 A.	3	—	
Z.	626 A.	7	—	
*	627 A.	2	—	

*City tap Second Street Fountain.

TABLE No. 13.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 28, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
A.	628 A.	300	+	Wind north, light.
B.	629 A.	100	+	
C.	630 A.	90000	+	
D.	631 A.	80000	+	
E.	632 A.	3800	+	
F.	633 A.	1900	+	Lake smooth.
G.	634 A.	1400	+	
H.	635 A.	220	+	
I.	636 A.	105	+	
J.	637 A.	20	—	
K.	638 A.	15	—	Current north to south.
L.	639 A.	18	—	
M.	640 A.	2	—	
N.	641 A.	0	—	
Q.	642 A.	1	—	
R.	643 A.	3	—	The Harbor water contained a large amount of dirt.
S.	644 A.	5	—	
T.	645 A.	0	—	
W.	646 A.	2	—	
X.	647 A.	0	—	
Y.	648 A.	4	—	
Z.	649 A.	6	—	

TABLE No. 14.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN CITY WATER TAKEN FROM HYDRANTS AT THE DEAD ENDS
OF CITY MAINS, JULY 28, 1908.

Sampling Points.	Laboratory Number.	Bacteria.	B. Coll.
City Fountain at Second St.....	650 A.	20	—
Willard and Fourth St.....	651 A.	100	—
Ohio and Ripley.....	652 A.	25	—
Elston and Barker.....	653 A.	30	—
Ann and Wabash.....	654 A.	10	—
Washington and William.....	655 A.	2	—
York and Barker.....	656 A.	4	—
Pine and William.....	657 A.	0	—
Spring and Detroit.....	658 A.	3	—
York and Park.....	659 A.	44	—

TABLE No. 15.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 29, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
A.	660 A.	20	+	Wind north, light.
B.	661 A.	150	+	
C.	662 A.	6000	+	
D.	663 A.	20000	+	
E.	664 A.	4500	+	
F.	665 A.	2600	+	
G.	666 A.	300	+	
H.	667 A.	13	—	
I.	668 A.	200	+	Lake smooth.
J.	669 A.	230	+	
K.	670 A.	260	+	
L.	671 A.	75	—	
M.	672 A.	7	—	
N.	673 A.	1	—	
Q.	674 A.	0	—	
R.	675 A.	6	—	
S.	676 A.	8	—	Current northeast to southwest.
T.	677 A.	0	—	
W.	678 A.	1	—	
X.	679 A.	0	—	
Y.	680 A.	15	—	
Z.	681 A.	23	—	

TABLE No. 16.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 30, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
A.	682 A.	60	—	Wind north, light.
B.	683 B.	150	+	
C.	684 A.	6000	+	
D.	685 A.	45000	+	
E.	686 A.	4000	+	
F.	687 A.	1800	+	
G.	688 A.	800	+	
H.	689 A.	40	+	Lake smooth.
I.	690 A.	35	—	
J.	691 A.	8	—	
K.	692 A.	25	—	
L.	693 A.	10	—	
M.	694 A.	4	—	
N.	695 A.	0	—	
Q.	696 A.	0	—	Current west to east.
R.	697 A.	93	—	
S.	698 A.	52	—	
T.	699 A.	0	—	
W.	700 A.	1	—	
X.	701 A.	3	—	
Y.	702 A.	85	—	
Z.	703 A.	135	+	

TABLE No. 17.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, JULY 31, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
A.	704 A.	45	—	Wind north, high.
B.	705 A.	600	+	
C.	706 A.	20000	+	
D.	707 A.	75000	+	
E.	708 A.	2000	+	Lake very rough.
F.	709 F.	500	+	
G.	710 A.	400	+	Current. Lake current from north to south. Harbor current from south to north.
I.	711 A.	600	+	

TABLE No. 18.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 1, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
A.	712 A.	200	+	Wind north, light.
B.	713 A.	230	+	
C.	714 A.	60000	+	
D.	715 A.	83000	+	
E.	716 A.	3000	+	
F.	717 A.	210	+	
G.	718 A.	26	+	
H.	719 A.	12	—	Lake rough.
I.	720 A.	5	—	
J.	721 A.	4	—	
K.	722 A.	4	—	
L.	723 A.	5	—	
M.	724 A.	21	—	
N.	725 A.	4	—	Current north to south.
Q.	726 A.	4	—	
R.	727 A.	4	—	
S.	728 A.	6	—	
T.	729 A.	3	—	
W.	730 A.	1	—	
X.	731 A.	2	—	Doubtful.
Y.	732 A.	13	Doubtful.	
Z.	733 A.	14	Doubtful.	

TABLE No. 19.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 3, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
A.	734 A.	600	+	Wind southwest, light.
B.	735 A.	550	+	
C.	736 A.	65000	+	
D.	737 A.	50000	+	
E.	738 A.	40000	+	
F.	739 A.	200	+	
G.	740 A.	35	—	Lake rough.
H.	741 A.	12	—	
I.	742 A.	15	—	
J.	743 A.	11	—	
K.	744 A.	20	—	
L.	745 A.	4	—	
M.	746 A.	5	—	Current west to east.
N.	747 A.	0	—	
Q.	748 A.	0	—	
R.	749 A.	27	—	
S.	750 A.	17	—	
T.	751 A.	1	—	
W.	752 A.	25	—	
X.	753 A.	40	—	
Y.	754 A.	20	—	
Z.	755 A.	18	—	

TABLE No. 20.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 4, 1908

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks
A.	756 A.	300	+	Wind west, light.
B.	757 A.	200	+	
C.	758 A.	6000	+	
D.	759 A.	90000	+	
E.	760 A.	40000	+	
F.	761 A.	200	—	Lake smooth.
G.	762 A.	34	—	
H.	763 A.	19	—	
I.	764 A.	12	—	
J.	765 A.	14	—	
K.	766 A.	15	—	
L.	767 A.	6	—	
M.	768 A.	0	—	
N.	769 A.	0	—	
Q.	770 A.	0	—	
R.	771 A.	20	—	Current west to east.
S.	772 A.	8	—	
T.	773 A.	1	—	
W.	774 A.	2	—	
X.	775 A.	12	—	
Y.	776 A.	16	—	
Z.	777 A.	9	—	

TABLE No. 21.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 5, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
A.	778 A.	60	—	Wind southwest, light.
B.	779 A.	105	+	
C.	780 A.	15000	+	
D.	781 A.	50000	+	
E.	782 A.	20000	+	Lake rough
F.	783 A.	400	+	
G.	784 A.	80	—	
H.	785 A.	15	—	
I.	786 A.	150	—	
J.	787 A.	14	—	
K.	788 A.	10	—	
L.	789 A.	5	—	
M.	790 A.	4	—	
N.	791 A.	6	—	
Q.	792 A.	2	—	Current west to east
R.	793 A.	16	—	
S.	794 A.	12	—	
T.	795 A.	1	—	
W.	796 A.	0	—	
X.	797 A.	15	—	
Y.	798 A.	18	—	
Z.	799 A.	25	—	

TABLE No. 22.—MICHIGAN CITY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, JULY 15, 1908, TO AUGUST 6, 1908.

Sampling Point.	Depth of Water in Feet.	Bacteria.			B. Coli Present During Test, Per Cent. of Days.
		Maximum.	Minimum.	Average.	
A.	6	600	20	198	63
B.	3	600	100	260	100
C.	12	9000	3000	38000	100
D.	7	9000	4000	52500	100
E.	18	66000	2000	11500	100
F.	20	4000	160	1000	90
G.	24	1400	26	300	54
H.	29	220	4	40	22
I.	12	600	5	100	31
J.	15	230	1	27	8
K.	26	260	5	41	22
L.	30	75	0	13	0
M.	30	28	0	7	0
N.	55	17	0	3	0
O.	55½	4	0	2	0
P.	60	3	0	0	0
Q.	58½	7	0	1	0
R.	40	93	0	16	0
S.	50	52	4	13	0
T.	60	13	0	3	0
U.	63½	5	0	2	0
V.	48	10	0	4	0
W.	53	25	1	6	0
X.	7	40	0	9	0
Y.	29	85	2	19	8
Z.	7	135	7	29	25

TABLE No. 23.—MICHIGAN CITY, IND.

ANALYSIS OF LAKE MICHIGAN WATER TAKEN FROM PRISON INTAKE FOR STATE PRISON SUPPLY.
In Parts per Million.

Date Taken.	Laboratory Number.	Turbidity.	Sediment.	Color.	Odor.	RESIDUE ON EVAPORATION.				NITROGEN AS				Chlorine.	Alka- linity.	Iron.	B. Coli.
						Total.	Fixed.	Loss on Ignition.	Free Am- monia.	Albumi- noid Am- monia.	Nitrates.	Nitrites.					
1907.																	
March 6	921	V. al.	V. al.	0.	None...	162.	124.	38.		.014	.100	.300	.005	5.	122.	Trace...	—
March 8	925	V. al.	V. al.	0.	None...	144.	126.	18.		.010	.050	.200	.006	4.	118.	Trace...	—
March 11	926	None...	V. al.	0.	None...	160.	100.	60.		.010	.024	.000	.000	6.	92.	.0	—
1908.																	
February 20	1558	V. much.	V. al.	50.	None...	230.	146.	84.		.022	.064	.000	.002	5.	126.	1.4	—
February 24	1560	V. much.	V. al.	50.	None...	174.	124.	50.		.015	.070	.400	.000	4.	122.	.6	—
February 26	1564	V. much.	None...	30.	None...	186.	136.	50.		.035	.095	.200	.001	4.	122.	1.4	+
April 21	1673	Much...	None...	20.	None...	138.	118.	20.		.045	.085	.150	.001	4.	118.	.3	—
April 23	1700	Much...	None...	30.	None...	132.	125.	7.		.050	.085	.060	.004	4.	122.	.3	—
May 25	1756	V. al.	None...	9.	None...	162.	122.	40.		.060	.160	.050	.002	4.	120.	.2	—

TABLE No. 24.—MICHIGAN CITY, IND.

ANALYSIS OF LAKE MICHIGAN WATER USED FOR CITY SUPPLY.
In Parts per Million.

Date Taken.	Lab- ora- tory Num- ber.	Source of Sample.	Tur- bidity.	Sedi- ment.	Color.	Odor.	RESIDUE ON EVAPORATION.			NITROGEN AS				Chlo- rine.	Alka- linity.	Iron.	B. Coli.
							Total.	Fixed.	Loss on ignition.	Free Am- monia.	Albumi- noid Am- monia.	Ni- trates.	Ni- trites.				
1906.																	
January 31.....	201	City tap.....	Sl.....	None...	0.	None...	170.	133.	37.	.090	.050	.003	.003	6.	54.	0.	—
1907.																	
February 6.....	887	City tap.....	None...	None...	0.	None...	150.	110.	40.	.014	.010	.003	.003	8.	106.	0.	—
March 25.....	910	City tap.....	None...	None...	0.	V. al...	232.	170.	62.	.120	.030	.100	.003	4.	122.	0.	—
1908.																	
January 17.....	1512	City tap.....	Sl.....	Sl.....	30.	None...	398.	294.	104.	.280	.056	.050	.004	16.	180.	4.	+
July 21.....	1946	New intake.....	None...	None...	40.	None...	152.	123.	30.	.036	.042	.000	.002	4.	118.	0.	—
July 21.....	1947	Mouth of harbor.....	None...	None...	50.	None...	138.	123.	16.	.016	.060	.000	.002	4.	117.	4.	+
July 21.....	1948	Harbor back of water works.....	None...	Sl.....	60.	Sl earth	260.	180.	80.	.280	.028	.000	.060	15.	154.	2.	+
July 21.....	1950	East end of breakwater.....	None...	None...	40.	None...	152.	124.	28.	.012	.046	.000	.002	4.	118.	0.	—
July 21.....	1951	One mile from harbor.....	None...	None...	4.	None...	128.	120.	8.	.006	.064	.000	.002	4.	118.	0.	—

TABLE No. 25.—MICHIGAN CITY, IND.

ANALYSIS OF WELL WATER USED FOR DRINKING AND DOMESTIC PURPOSES.]

In Parts per Million.

Date Taken.	Laboratory Number.	Turbidity.	Sediment.	Color.	Odor.	RESIDUE ON EVAPORATION.			NITROGEN AS				Chlorine.	Alkalinity.	Iron.	B. Coli.
						Total.	Fixed.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.				
1906.																
August 6.....	501	Sl.....	Much Iron	60	Sl. foul.	599.	304.	205.	.080	.116	.000	.000	34.	163.	.80	—
August 25.....	522	V. S.....	Sl.....	0	Sl. foul.	363.	300.	63.	.230	.004	.100	.000	25.	290.	.10	—
1907.																
February 6.....	898	None.....	None.....	0	None...	174.	90.	84.	.054	.014	.200	.003	23.	67.	.10	—
February 6.....	899	Sl.....	None.....	0	None...	700.	600.	100.	.210	.020	.100	.000	66.	330.	2.40	—
March 25.....	938	V. Sl.....	V. Sl.....	0	None...	460.	268.	192.	.004	.024	16.000	.020	4.	246.	.00	—
September 16.....	1293	None.....	Sl.....	19	None...	436.	318.	118.	.032	.064	4.000	.001	30.	104.	.16	—
November 11.....	1386	None.....	None.....	55	None...	174.	148.	26.	.300	.114	.000	.000	3.5	105.	.14	—
December 12.....	1468	None.....	None.....	9	None...	162.	128.	34.	.074	.076	.000	.000	7.	118.	1.00	—
1908.																
January 23.....	1515	None.....	None.....	2	None...	614.	426.	188.	.025	.090	10.000	.400	60.	264.	.00	+
February 25.....	1562	None.....	None.....	4	None...	126.	46.	80.	.010	.045	4.000	.010	6.	28.	.50	—
April 21.....	1674	None.....	None.....	9	Sl.....	99.	96.	3.	.035	.060	.100	.001	3.	95.	.30	—
June 1.....	1780	V. much..	Sl.....	40	None...	334.	288.	36.	.180	.096	.000	.001	3.	296.	1.20	—
June 24.....	1859	V. much..	V. much..	20	None...	554.	386.	168.	.085	.190	8.000	.040	17.	46.	2.20	—

July 7.....	1886	None.....	Sl.....	31	None...	184.	128.	56.	.140	.080	.100	.001	7.	126.	1.00	+
July 20.....	1935	None.....	None.....	33	None...	476.	352.	124.	.036	.130	4.000	.080	35.	146.	.01	+
July 21.....	1944	None.....	Sl.....	4	None...	286.	204.	82.	.032	.022	.000	.002	30.	130.	.60	-
August 3.....	2000	None.....	Sl.....	10	V. Sl...	466.	330.	136.	.064	.074	1.500	.020	43.	78.	.10	+
August 3.....	2001	None.....	None.....	9	None...	636.	430.	206.	.540	.080	.600	.200	38.	167.	.20	-
August 3.....	2003	None.....	V. Sl.....	12	None...	270.	130.	140.	.012	.044	2.500	.003	7.	18.	.00	-
August 3.....	2004	V. Sl.....	Sl.....	9	None...	444.	280.	160.	.012	.012	1.500	.080	14.	170.	.00	-
August 3.....	2006	None.....	None.....	20	None...	440.	360.	80.	3.600	.210	.000	.010	38.	228.	.60	-
August 3.....	2007	None.....	V. Sl.....	5	None...	150.	80.	70.	.016	.014	.600	.020	2.	59.	.00	-
August 3.....	2008	None.....	V. Sl.....	12	None...	846.	716.	130.	.016	.100	.100	.120	11.	254.	.00	-
August 3.....	2009	None.....	None.....	5	None...	136.	88.	50.	.014	.034	.600	.000	1.	35.	.00	-
August 3.....	2010	None.....	V. Sl.....	0	None...	742.	454.	288.	.024	.120	.700	.005	48.	182.	.00	-
August 3.....	2011	Sl.....	Much.....	5	None...	440.	340.	100.	.104	.130	.000	.000	11.	210.	2.00	-
August 3.....	2012	None.....	V. Sl.....	5	V. Sl...	650.	320.	330.	.164	.070	.070	.010	18.	160.	.00	-
August 3.....	2014	None.....	V. Sl.....	9	None...	406.	256.	150.	.010	.070	1.000	.000	26.	113.	.00	-

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TABLE No. 26.—MICHIGAN CITY, IND.

ANALYSIS OF WELL WATER USED IN THE PUBLIC SCHOOLS.
In Parts per Million.

Date Taken.	Laboratory Number.	Turbidity.	Sediment.	Color.	Odor.	RESIDUE ON EVAPORATION.			NITROGEN AS				Chlorine.	Alkalinity.	Iron.	B. Coll.
						Total.	Fixed.	Loss on Ignition.	Free Ammonia.	Albuminoid Ammonia.	Nitrates.	Nitrites.				
1906.																
January 20.....	186	Sl.....	None....	5.	None....	371.	278.	93.	.270	.150	.000	.005	22.	118.	.6	—
January 20.....	187	Sl.....	None....	5.	None....	321.	266.	55.	.048	.090	.000	Trace..	3.	58.	1.2	—
January 20.....	188	Sl.....	None....	0.	None....	404.	410.	84.	.078	.264	5.00	.020	59.	86.	.2	+
January 20.....	189	None....	None....	0.	None....	333.	288.	45.	.536	.114	12.0	.040	12.	76.	.2	—
January 20.....	190	Sl.....	Much....	0.	None....	342.	278.	64.	1.920	.234	.000	.000	20.	70.	48.0	—
January 20.....	191	None....	None....	0.	None....	185.	146.	39.	.028	.114	3.00	.010	4.	20.	.1	—
January 31.....	199	V. much.	Much....	0.	None....	775.	666.	109.	.264	.144	.000	.020	52.	205.	5.0	—
January 31.....	200	None....	None....	0.	None....	86.	53.	33.	.110	.138	.600	.025	1.	6.	.1	—
February 9.....	207	Sl.....	Much....	0.	None....	538.	450.	88.	.620	.134	.050	.000	32.	82.	1.0	—
February 14.....	213	Sl.....	None....	5.	None....	350.	254.	96.	.210	.030	.000	.006	35.	66.	1.6	—
February 24.....	219	Much....	Much....	5.	None....	483.	410.	72.	.616	.084	.400	.015	12.	168.	4.0	—
February 28.....	223	Sl.....	None....	0.	None....	832.	796.	36.	.474	.064	.000	.000	280.	142.	Trace..	—

TABLE No. 27.—MICHIGAN CITY, IND.

TYPHOID FEVER CASES REPORTED 1902-1908.

Year.	Jan.	Feb.	Mar.	April.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	To'al.
1902.....				No	record	kept.				8	0	1	9
1903.....	0	3	0	0	4	7	2	5	2	3	1	4	31
1904.....	3	4	11	20	8	1	1	0	4	0	3	7	62
1905.....	0	1	4	6	5	5	0	2	14	3	6	7	53
1906.....	0	5	5	16	3	3	1	5	0	1	5	1	45
1907.....	6	25	10	5	2	0	1	0	4	1	2	5	61
1908.....	20	46	43	26	26								

TABLE No. 28.—MICHIGAN CITY, IND.

TYPHOID FEVER DEATHS REPORTED 1882-1907.

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1882.	1	0	0	0	1	0	0	3	2	1	1	0	9
1883.	0	1	0	0	0	0	1	0	1	1	0	1	5
1884.	0	0	0	0	0	0	0	0	0	0	0	0	0
1885.	0	0	0	0	0	0	0	0	1	0	0	0	1
1886.	0	0	0	0	0	0	0	0	0	0	1	0	1
1887.	0	0	0	0	0	0	1	1	0	0	0	0	2
1888.	1	1	0	0	0	0	0	0	0	2	1	0	5
1889.	0	1	1	0	0	1	0	1	4	1	0	2	11
1890.	0	0	0	0	0	1	1	0	1	1	1	0	5
1891.	0	0	0	1	0	0	0	1	0	1	1	0	4
1892.	0	1	0	1	1	0	1	0	0	1	0	1	6
1893.	0	0	1	0	0	0	0	2	1	1	1	0	6
1894.	1	1	0	1	0	0	1	0	0	0	1	0	5
1895.	0	0	0	1	0	0	1	1	0	2	2	0	7
1896.	1	0	0	0	1	0	0	0	1	0	0	0	3
1897.	0	0	0	0	0	1	1	0	0	1	1	0	4
1898.	0	0	0	0	0	1	0	0	0	0	0	0	1
1899.	1	2	2	1	0	0	0	0	0	1	0	0	7
1900.	1	1	0	1	0	0	0	0	0	1	1	1	6
1901.	0	0	0	0	0	0	0	0	0	0	1	0	1
1902.	2	0	0	1	1	0	0	1	0	0	0	0	5
1903.	1	1	0	0	0	3	1	2	0	1	1	1	11
1904.	1	2	0	2	0	3	0	0	0	0	0	0	8
1905.	0	0	1	0	0	1	1	0	2	1	1	1	8
1906.	1	0	1	1	1	1	0	1	0	0	0	1	7
1907.	0	1	1	1	0	0	1	1	0	0	0	3	8

**LABORATORY OF HYGIENE
STATE BOARD OF HEALTH**

**The Sanitary Condition of the Southern
End of Lake Michigan Bordering
Lake County, Indiana**

THE SANITARY CONDITION OF THE SOUTHERN END OF LAKE MICHIGAN, BORDERING LAKE COUNTY, INDIANA.

BY H. E. BARNARD AND J. H. BREWSTER.

Hardly more than fifty years ago the sanitary condition of the southern end of Lake Michigan offered no problems. The Lake was a body of pure water and, save at a few widely-separated points where cities were springing into existence and commercial life was developing, its shores were uninhabited and its waters undisturbed by shipping, while even at those places household sewage and industrial waste had not become a sufficient nuisance to demand its destruction. The time came, however, when these wastes had to be gotten out of the way, and naturally enough the great body of water lying just at hand, seemingly capable of receiving and destroying any amount of sewage at no expense whatever, became the dumping ground.

When the growing cities could no longer depend upon ground and surface waters for a supply, just as naturally they turned also to the great lake for water, and now for many years they have been pouring sewage into Lake Michigan through one pipe and pumping out a water supply through another.

Is it not strange that, in this country, at least, the development of our national resources, the building of cities, the creation of great industries, has always meant destruction of the natural purity of lakes, streams and underground water? But such has been the case, and today the cities along Lake Michigan are awakening to the fact that their most valuable civic asset, a pure water supply, is in great danger of being destroyed, and that already they have sacrificed hundreds of lives on the altar of ignorance and carelessness, and wasted at the sick bed and cemetery far greater resources than would have preserved their water supply in its pristine purity.

The shore line of Indiana along Lake Michigan is very short compared with that of other States, but what Indiana loses in miles of coast is made up in other ways. Nearly all of the ex-

treme southern end of the Lake, with its burden of sewage and shipping, adjoins Indiana. And as the industrial march of Chicago progresses to the south and eastward, mile after mile of shore is losing its sandy beach and taking on the aspects of commercialism. Already Indiana's cities extend from Michigan City to Chicago, and within fifteen years will have a greater population than is gathered at any other point on the Lake save at Chicago herself.

The questions of pure water supplies and sewage disposal are more closely interdependent here than is the case with river cities, which may suffer from the sewage discharged by up-stream cities but whose water is not usually affected to any great extent by its own wastes. And the problem is not to be solved for the benefit of the lake cities alone. The conservation of the purity of the southern end of Lake Michigan is in the near future to be a factor in the development of all northern Indiana cities. These cities are now depending upon deep well supplies, but it is only a question of time when, because of the failure of the underground water to meet the demands of an increased population, they too will be obliged to go to the Lake.

It has been known for many years that the quality of the water of Lake Michigan was constantly being injured by the continued addition of domestic sewage and trade waste from every city and industry on her shores. The concentration of this dejecta of civilization at the larger cities has compelled the continual extension of water intakes further and further into the Lake in an effort to reach pure water outside the zone of pollution.

Some years ago the City of Chicago found it was not longer possible to sewer into the Lake and depend upon it at the same time for a water supply. The death rate from intestinal diseases due to polluted water was even then far above normal, and a change of either the water supply or sewage disposal became imperative. The problem was in part solved by the construction of the Chicago Drainage Canal, which diverts the sewage of a large part of the city of Chicago from the Lake into the Illinois River, through which it flows to the Mississippi and thence to the Gulf of Mexico. After the addition of sewage to the Lake was discontinued, the polluted area around Chicago began to diminish in size until at the present time the four-mile cribs supplying the city are obtaining a good quality of water, and the water at the two-mile cribs is unwholesome only part of the time.

That the new system of disposing of the sewage has been a benefit to the city is readily shown by the gradual lowering of

the typhoid fever death rate, and also by the fact that the prevalence of typhoid fever in Chicago is less than in neighboring cities. For instance, it is claimed by the City Board of Health of Hammond, Indiana, that that city, with its 24,000 population, had this last year half as many cases of typhoid fever as the whole city of Chicago with a population one hundred times as great.

Statistics furnished by the Board of Health and given in table No. 30, show that the typhoid death rate of Hammond for the years 1903 to 1907 inclusive has reached a maximum of 140 per 100,000 and a minimum of 66, the average being 84.6 per 100,000 population. The city of Whiting, as shown in table No. 31, from 1904 to 1907 inclusive, had a maximum death rate of 99 and a minimum of 0, the average being 47.5. In East Chicago from 1903 to 1907 the death rate ranged from 160 to 0, the average being 48 per 100,000, as shown in table No. 32.

It has been accepted as a general rule that a continued typhoid death rate above 20 is an indication that something is at fault with the public water supply. As shown above, for the last five years the death rate of all three of these cities has been more than double this figure, and has several times been six and eight times greater than this limit of safety.

Recognizing the fact that these cities, which are rapidly growing into what will undoubtedly be one of the greatest business sections of the world, will suffer serious material injury and eventually be compelled, as was Chicago, to devise some means of keeping down this typhoid loss, the health officers of Hammond, Whiting and East Chicago in the summer of 1908 requested the State Board of Health to make a sanitary survey of the Lake near those cities with the following objects in view: (1) To determine the real character of the different water supplies with respect to their present sanitary condition; (2) to determine the amount and character of the sewage coming from the Calumet River at South Chicago, the Glucose sewer and the small sanitary sewers discharging on the Hammond lake front, the Standard Oil Company's sewer discharging near the Whiting intake, the sewer into the harbor at the Inland Steel Company's plant, and the small sanitary sewer at Indiana Harbor, the last two of which are close to the East Chicago water works intake; (3) to determine the distribution of this sewage in the Lake under the different prevailing winds and lake currents which occur along the lake frontage of these cities; (4) to study the probable future quality of the sewage and suggest suitable means for its disposal.

In accordance with the request of the local health boards, on August 13, 1908, the State Board of Health established a temporary bacteriological laboratory, equipped for making colony counts and the presumptive test for *B. coli*, at the pumping station of the East Chicago Water Works Company, at Indiana Harbor. Forty-seven sampling points, covering a territory of five miles off shore from Indiana Harbor to the Chicago two-mile crib off Brighton Beach, were located and marked by buoys. Samples were taken daily at these points from August 19th to and including September 26th.

The sampling points were located so as to establish a line of limitation of sewage distribution straight into the Lake from each water intake, at every sewer outlet and on a diagonal in each direction from the mouth of each sewer. From a careful study of the bacterial content of the water at these points on different days with varying winds, it was possible to determine the quality of the sewage entering the Lake and how far it was carried in any direction, and also to gain a substantial idea of the prevailing currents and counter currents. Chart No. 2 shows each sampling point with the number used to indicate it. Samples were taken from each intake and at each mile point in a line N. 23° E. for five miles into the Lake; at the mouth of the Indiana Harbor sewer and one mile from it N. 23° E.; at the mouth of the harbor of the Inland Steel Company's plant and one mile from it N. 23° E.; at the Standard Oil Company's sewer, one mile from it N. 67° E., and one mile N. 23° W. at the mouth of two sewers, one a 36-inch sewer from Whiting and the other a 36-inch sewer from Robertsdale; at a point one mile N. 67° E. from these sewers; at the mouth of the Glucose sewer, one mile N. 23° E. and one mile N. 23° W. from the Glucose sewer; at the mouth of the Calumet River and at points one-half mile, one mile, and two miles S. 23° E. from the lighthouse at the mouth of the river; in the harbor half way between the lighthouse and the government foghorn; at the government foghorn and every mile for five miles in a line N. 45° E. This last point, which is No. 41, is practically seven miles N. 23° E. from the Hammond intake. Points were located at one-half and one and one-half miles north from the foghorn and at the government gas buoy; at the Brighton Beach bathhouse, the temporary crib for the construction of the new water works tunnel and at the 68th Street crib.

The direction and velocity of the wind and the direction of lake currents and counter currents were noted daily. The investi-

gation necessitated the collection and bacterial analysis of 606 samples of water, and several chemical analyses of samples taken from different points in the Lake and from the city supplies. All lake samples for bacterial analysis were collected from a water level 10 feet below the surface. Since there are practically no wells throughout this section of the State, the only source of supply is the Lake.

The Drainage of the Calumet Region.

The southerly end of Lake Michigan bordering Lake County is affected by the drainage of the Calumet River and of Wolfe Lake, which receives the sewage of the Glucose Works, and by the sewage from Whiting, East Chicago and Indiana Harbor. The character of the Lake water will shortly be influenced to a greater degree than at present by the opening of a canal waterway which will connect Lake George and the Calumet River with the Lake at Indiana Harbor. The Grand Calumet River is a tortuous channel which has its origin in Lake Michigan, and after running through Lake County empties back into the Lake. One end is about three miles east of Gary and the other terminates at South Chicago. However, at the present time the mouth east of Gary is closed by a sand dune, thus leaving but one outlet, at South Chicago. The Calumet River, together with the Little Calumet, which empties into it near Hegewisch, Illinois, besides receiving the drainage of the northern Indiana cities and South Chicago, receives the drainage and storm flow of a great many small towns in Lake County and in the Illinois territory lying south of Chicago.

The Lake Currents.

As the outlet is small in comparison with the quantity of water it contains, there is no direct flow in the Lake, and the movements of the water are entirely dependent upon local winds, which vastly overbalance the general movement of translation and drive the water one way or the other according to their direction, velocity and duration. The atmospheric temperature also influences these movements, and near the mouth of large streams these, too, have their effect.

The friction of the wind blowing over the surface of a large body of water tends to produce a surface current of the water in the same direction, and if the wind continues to blow from one direction, a general surface drift of the water in that direction is established. These induced currents may be interrupted at times

or even reversed, but as a whole they represent an advance movement in the direction of the prevailing winds. It is the general impression that the prevailing currents are from the west to east along the southern shore of the Lake and from east to west along the northern shore or counter clock-wise around the entire Lake, and water works intakes in some instances have been placed with the idea that these currents would act as a protection to their water supply. This idea is pronounced a fallacy by Major W. V. Judson, Corps of Engineers of the War Department, who has found no positive currents in Lake Michigan, and after a careful study of the lake currents concludes that they may run in any direction at any time according to the direct influences of the wind and atmospheric temperature. Milwaukee, Wisconsin, placed its water intake above the sewage inflow with the idea that it would be rendered wholly safe from pollution, but it has been shown that the currents of the Lake at this point vary as elsewhere with certain winds, and occasionally carry polluted water in the direction of the intake.

It has been shown that the shore points are affected by counter currents. That is, on-shore winds bring the surface water in, and the shore water washes out, thus forming a direct opposite current. Off-shore currents have the reverse effect, bringing the deep water in and taking the surface water out. Water works intakes that are close to shore are affected by those currents, as they are within the influence of the off-shore winds which take the shore deposits directly over the intake, and also by the on-shore winds, which bring the most drainage over the intake by means of the undertow or counter current. Shore currents are also affected by piers or breakwaters that are built out into the lake. Water on the leeward side of a pier is carried away by the prevailing wind. This can only be supplied by water from the leeward side of the pier, and in this way a direct counter current is formed against the wind. Currents have been noted at the Hammond water works, where the sewage from the Glucose Works goes into the Lake and is carried by a current from west to east. In a short time it turns toward the shore and on reaching the shore is deflected from east to west until it again reaches the flow from the sewer, when it is carried over the original course, thus producing a whirlpool effect around the Hammond intake. Within the area covered by this circular current large quantities of the glucose effluent was always found. These counter currents have been noticed not only near the

shore; they have been encountered five and six miles out into the Lake on perfectly calm days when there was apparently no reason for the change in direction of flow. The government engineering crew on the U. S. S. Search, who were making a survey of the bottom of the Lake from Gary to South Chicago at the time of this investigation, stated that as many as three distinct currents going in opposite directions have been found within a linear distance of two miles, and that these currents were apparently stronger on a calm day than when the Lake was rough.

A probable reason for these currents at this point of the Lake is that the frontage of Hammond, Whiting and Indiana Harbor is in what might be called a "pocket," lying between the Gary Harbor and South Chicago, and that currents caused by southwesterly winds, starting, for instance, at South Chicago, would strike the projection at Gary and be compelled to return against the direct wind current.

The Grand Calumet River, owing to its large drainage area, discharges some water into the Lake practically all of the time, but with strong northerly winds a decided current up the harbor has been observed. While the natural appearance of the river water is very turbid, at such times the appearance of the water in the mouth of the harbor is the same as that of the lake water. During flood times and when off-shore winds prevail, the river water has a high velocity and streams of murky water can be seen in the Lake for several miles out, reaching to the west as far as the Hyde Park crib of the Chicago water works with the easterly currents, and to the east in front of Hammond with the westerly currents. That the effluent of the Calumet River reaches these points is shown by the bacterial counts of August 31st on Chart No. 4, and on September 5th on chart No. 5.

The current distribution is shown on chart No. 4 to carry sewage from the Glucose Works five miles into the Lake, where point No. 30 has 300 bacteria per cubic centimeter. On chart No. 5, when the sewage of September 4th is being carried by westerly currents, point No. 25 off Hammond has 6,000 bacteria, point No. 26, or one mile from shore, has 85,000 bacteria, and point No. 27, or two miles from shore, has 2,000 bacteria; point No. 17, or three miles from the Whiting shore, has 12,000 bacteria, which is in direct contrast to points Nos. 16 and 18, which have 6 and 10 bacteria respectively. Point No. 7, four miles from shore off Indiana Harbor, has 6,000, which is contrasted against point No. 6 with 27 bac-

teria and point No. 8 with 50 bacteria. This chart shows a distinct current from the Glucose sewer passing over the one-mile point at Hammond, the three-mile point at Whiting and the four-mile point at Indiana Harbor. This shows conclusively that the effluent from the Glucose Works is carried by currents for over ten miles into the Lake. That the sewage from this plant goes west with easterly currents is difficult to show by bacterial counts as the differentiation between bacteria from the Glucose Works and those from the dumpings of dredged material in this locality or from those brought in by currents from the Calumet River is impossible, for points between the Hammond intake and South Chicago Harbor always show high counts. That the glucose sewage does go in this direction is easily determined from direct observation, however, as the line of demarcation between the lake water and the stream of sewage is often very distinct.

At Whiting the Standard Oil Company placed their five-foot sewer on the east side of the pier as a protection to the city water. That this is no protection is shown on chart No. 4, when on September 1st there were 100,000 bacteria at the sewer, or point No. 12, and 80,000 bacteria at point No. 14, the Whiting intake. On this date four-fifths of the water going to the people of Whiting was the discharge of the Standard Oil Company's sewer. With easterly currents, the effluent from this sewer is thrown against the pier and follows along until it reaches the end, where it is but a few feet from the intake, to which it is carried in a direct, compact stream. In this way a more concentrated sewage is pumped to the people than would be the case if there were no pier to direct the flow. Oil is seen on the water at times as far west as the Hammond intake. This was especially noticeable on September 24th. At other times the oil reaches to the east as far as the intake at Indiana Harbor. The water of East Chicago is affected by currents carrying the effluent from the Inland Steel Company's harbor, as is shown on chart No. 5, in which point No. 9, the mouth of the harbor, has 250,000 bacteria, while 65,000 bacteria are carried by westerly currents to the intake at point No. 3. Observations made by following streams of sewage with a boat from the different places of entrance show the currents to go in the directions indicated in charts Nos. 7, 8 and 9, according to the varying winds. These bacterial counts and observations are a positive corroboration of Major Judson's investigations, in which he found that currents may flow in any direction according to the prevailing winds.

Lake Level During July, August and September.

The records taken during these months were incomplete observations, but serve to show in a general way the effect of the wind on the lake level. Under ordinary conditions of light wind, the lake level does not vary more than a few inches during the twenty-four hours, but during severe storms the fluctuation amounts to nearly a foot. Off-shore winds naturally tend to depress the lake level, while winds blowing toward the shore tend to raise it. Winds blowing from the north tend to raise the level, while the effect of southerly winds blowing off shore varies according to the intensity and duration. If strong northerly winds prevail for some time, the lake level bordering Lake County is raised because of the mass of water in the Lake being driven toward the southern shore. If strong southerly winds prevail for some time, the level of the Lake will be lowered by the water being driven in the opposite direction. The fluctuations of the lake level deserve much more careful study than they have yet received.

At Whiting they are of no importance, as there is no harbor or river water flowing into the Lake at this point, but at Indiana Harbor they will be of considerable importance when the water way is opened up for boating purposes for the same reason that they are of importance at Hammond on account of the Calumet River at South Chicago, where they materially affect the flow of the water from the harbors and the settling of the sewage before it reaches the Lake. During August and September the prevailing wind was from the north, which caused the lake level to be unusually high at the south end of the Lake. When the strong northerly winds did not prevail, the wind was usually from the south, but was in the form of light breezes, which only permitted the Lake to seek its level instead of forming an extra high level at the northern end with a resultant decided drop in the level at the southern end of the Lake. Then, again, throughout the summer of 1908 the mean lake level was abnormally high. The report of the United States Lake Survey shows that during July and August Lake Michigan had the highest water level since 1888, when the water was half a foot higher. It was eight inches above the average stage for the past ten years, two and three-fourths inches higher than in 1896. But in 1886 the water was nineteen and three-fourths inches higher. These abnormally high water levels, together with the extremely dry weather when there was no flushing out of the sewer mains and no storm water carrying large

quantities of refuse matter entering the river, made a very appreciable difference in the amount of sewage entering the Lake from the Calumet River. The same is undoubtedly true of the harbor of the Inland Steel Company plant, for the sewage had a chance to settle out and the pathogenic organisms had an opportunity to die, so that when changes of wind did occur only a small portion of the bacteria and comparatively small amounts of the organic impurities entered the Lake, although there was a lowering of the water level at the mouths of the harbors of about a foot. At Michigan City during July and August, where an extensive investigation of the harbor water was carried on, it was found that practically none of the sewage that entered the harbor reached the Lake. About one-half of it had settled out one-half mile below the sewer outlet, and by the time it reached the mouth of the harbor it contained but small amounts of sewage. It was also found that oftentimes there was more sewage above the sewer outlet than was entering the harbor, which shows that the up-stream currents carried and deposited the sewage above the source of pollution rather than allowing it to enter the Lake. In this way the harbor acted as a settling basin where the anaerobic bacteria decomposed the organic matter and produced the septic action which was invariably seen on the surface of the water. As the same relative conditions undoubtedly exist at South Chicago, it is readily seen that the Calumet River during flood times and lower lake levels is much more damaging to the purity of the Lake than was experienced during this investigation.

That only a small portion of the sewage that entered the Calumet reached the Lake was plainly shown by the septic action which was constantly observed the entire length of the river.

Quality of the Water of Lake Michigan.

The water of the Great Lakes is generally clear and colorless, with little organic matter present, either in suspension or in solution, and with comparatively low bacterial counts.

The water is low in sulphates and chlorides and relatively high in carbonates. It is subject to very small variations in mineralization, although the constantly increasing volume of sewage being poured into the Lake is slowly but surely raising the chlorine, sulphate and nitrate contents. The present chemical composition of the water is given by R. B. Dole of the United States Geological Survey as follows:

<i>Parts Per Million.</i>	
Turbidity	Trace
Silica	10.0
Iron	0.04
Calcium	25.0
Magnesium	8.2
Sodium and potassium	4.7
Carbonate radicle	2.9
Bicarbonate radicle	112.0
Sulphate radicle	7.2
Nitrate radicle	0.3
Chlorine	2.7
<hr/>	
Total solids	118.

The chemical composition of the water as determined at the State Laboratory of Hygiene for the purpose of arriving at its sanitary value is shown in table No. 29, under the city supplies of Whiting, Indiana Harbor and Hammond. On account of the great dilution, there is nothing of any special importance in the chemical analysis of the city supplies. Analysis No. 2,225, given in table No. 29, which was taken five miles from shore, is very similar to those of the city supplies, although it is seen that the sample from the five-mile points was generally lower in the solid, nitrogen and chlorine contents.

Lake Michigan is very shallow along the shore bordering Indiana, and is at certain times rendered more or less turbid by reason of the deposits of clay being stirred up by the wind and currents.

The character of a water for drinking and domestic purposes depends very largely upon its freedom from organic pollution, especially in the form of household sewage. As to this point, the water of Lake Michigan in its normal state approaches absolute purity, and where supplied in this condition its quality is unquestionable. It was found that at Michigan City during July and August of 1908 that the water one mile in any direction from the mouth of the harbor was practically sterile. Unfortunately, the water intakes are close to shore and in many instances also near the outlet of public sewers, as at Hammond, where the intake is only 2,000 feet from shore, with two small sewers, one from Whiting and one from Robertsedale, to the east, and the Glucose sewer to the west, all of which are within a radius of 3,000 feet from the intake. At Whiting the intake is but 2,000 feet from the shore

and the same distance from the Standard Oil sewer; and at Indiana Harbor the intake is 3,000 feet from shore and about 3,500 feet from the mouth of the Inland Steel Company's harbor and the Indiana Harbor sewer. It therefore becomes necessary to determine whether or not the sewage that enters the Lake is carried to the intake of the water supply in order to know the true character of the city water.

Location and Water Front of East Chicago and Hammond.

These cities occupy about ten miles of the Indiana frontage on Lake Michigan, reaching from the Illinois boundary on the west to Gary, Ind., on the east. East Chicago proper does not front on the Lake, but one ward, known as Indiana Harbor, has a little over two miles of lake frontage. The only dockage that it has is the very small harbor at the Inland Steel Company's plant, the east side of which is a private dock belonging to the steel company and used for unloading ore at the blast furnace. Only the west side is available for public dockage, and is used only to harbor small pleasure boats. There is under construction, however, the opening up of a waterway which will connect Lake George and the Calumet River with the Lake for shipping purposes. At present there is but a very small stream of water flowing into the harbor, but when this water way is opened there will be a considerable land drainage, and undoubtedly some drainage from the Calumet River entering the Lake through this harbor. When the channel is opened the water supply of this city will be much more affected by the harbor than it is at the present time.

Whiting has between two and three miles of lake frontage, most of which is occupied by the Standard Oil Company's plant. There is no harbor, simply a pier, extending into the Lake about 1,500 feet, from which the oil boats are filled.

The city of Hammond proper is almost five miles from the Lake, although Robertsdale, one of its wards, is on the lake front. There is no harborage of any kind on the Lake, but as the Calumet River passes through the business section of the city, all the water traffic is carried on at the river docks by the way of the South Chicago Harbor.

The mouth of the Calumet River is made available for shipping purposes by the continual dredging of silt and mud deposits. There are several manufacturing plants along the shore, the largest being the Illinois Steel plant located on the west side of the mouth of the river. At the end of the dock is a small government

lighthouse. The government has also a pier running from the western end of the Illinois Steel plant into the Lake, which turns at an angle of about 135° until it is opposite the mouth of the river. At this point is established a fog signal and lighthouse. In this way there is a harbor covering nearly a square mile for the protection of ore and freighting boats. About one mile north of the fog signal is a gas buoy marking high ground.

The bottom of the river is heavy clay, but because of the continual deposition of organic matter and silt coming from the sewer outlets, it is a mass of ooze its entire length.

The bottom of the Lake bordering Lake County is principally sand, although there are many outcroppings of clay, covering small areas, which are so situated that they are constantly scoured clean by incoming and outgoing currents. The lake bottom slopes very gradually from the shore, and five miles from shore has an average depth of only thirty-eight feet. no point within this area showing any greater depth.

Because of the force of the storms which sweep down from the north, carrying the lake water before them, the surf at certain periods of the year is very heavy. That the surf has its effect on the lake bottom is shown by the gulying and rolls in the sand bed.

Out from Indiana Harbor there are several higher sections in the lake bottom, which may account for some of the reverse currents found in this locality.

The Water Supply of Lake County.

The water supply of East Chicago, which takes in Indiana Harbor, is derived from the Lake and is supplied by a private company known as the East Chicago Water Works Company. The pumping station is about 200 feet from the shore at Indiana Harbor. The intake consists of two separate lines running 3,000 feet into the Lake, and is located in 20 feet of water. One goes in a direction N. 23° E. from the shore, and is a 12-inch castiron pipe, the mouth of which is a cylindrical drum that is perforated with small holes for the purpose of keeping out floating bodies. The other is a 36-inch steel line running N. 67° E. The water is supplied to this line through a wooden crib 14 feet square, the top being covered with wooden slats. The crib is double walled, filled in with quarry stone. The main is continued through the crib, the end being closed with a solid cap, the purpose of this being to make an easy connection if at any time the line is extended farther into the Lake. The intake which is in use at the present time is a 36-inch

"T" projection with a perforated steel cover inside of the crib. There is also a 36-inch "T" projection just before the crib is reached, which is now covered with a solid cap, that can be replaced by a perforated steel cover and used as an intake if for any reason the crib cannot be used. These intakes are close together, but diverge toward shore. The water is pumped into a small well, from which it is pumped into a standpipe, the city then being supplied by gravity pressure. In the winter, when these intakes clog up with slush ice, water is pumped back from the well to clean out the mains. The average daily consumption is about three and one-half million gallons, or 175 gallons per capita. Of this amount, about one and one-quarter millions are supplied to Indiana Harbor. The entire system contains at present about 31 miles of water mains. There are no wells in use, and the entire city of about 20,000 population, of which Indiana Harbor has about 8,000, is wholly dependent upon the public supply.

The water is sold on both flat rate and by meter. The flat rate ranges from \$3 to \$28 per year, the average being \$12 to \$14 dollars. The meter rate varies from three to ten cents per 1,000 cubic feet.

The water supply of the city of Whiting is taken entirely from the Lake. The intake is located 2,000 feet from shore just off the Standard Oil Company's pier, and is in about 20 feet of water. The main is a five and one-half-foot steel line with an "L" turned upward at the end, which is covered with a grating as a protection from floating bodies. There are four "L's" which project from the mouth of this main which also take in water. The pipe line and pumps belong to the city, but the pumping is done by the Standard Oil Company, which makes no charges for this work inasmuch as the exhaust steam is of enough value to pay for the pumping. The water is pumped into wells, from which it is delivered by direct pressure. When slush ice clogs up the mains the water is pumped from these wells back through the mains. There are no wells in the city, the public supply alone being used. The average daily consumption is about two million gallons, or 277 gallons per capita, the population being about 7,200. The water is sold on a flat rate of \$3 per year, the money being used principally to make extensions and repair the mains. This is looked after by the city.

The water supply of the city of Hammond is derived entirely from the Lake. It is supplied by three lines running parallel to each other in a direction N. 23° E., one being a 30-inch line, one

20 and the other 16 inches. The intake is 2,000 feet from shore, and is located in about 20 feet of water. The mouth of the 30-inch line, which is the one in use at the present time, is in the form of a cylindrical drum which contains 16,000 one-half-inch holes. The water is taken 8 feet from the bottom.

The plant is owned and operated by the city, and also supplies a small town in Illinois known as West Hammond with about 750,000 gallons daily. The total daily consumption is five and one-half million gallons, or 229 gallons per capita, the population served being 24,000. About four million gallons of this amount is used for domestic purposes. Some of the larger manufacturing companies have their own water works systems, among which is the Glucose plant, which takes its supply from Wolf Lake and uses about two and one-half million gallons daily.

The entire system contains 85 miles of water mains. There are not more than 100 wells in the city, and practically the entire population is dependent upon the public supply. The water is sold on a flat rate, and the charges are extremely low in comparison with other cities of the same size, the flat rate being \$6 per annum, while the meter rate is from two to ten cents per 1,000 gallons.

Disposition of the Sewage.

Indiana Harbor empties its sewage directly into the Lake. This is principally domestic sewage, and as there was no rain during or for some time previous to this investigation, there was no surface wash entering the Lake at any time. The sewage of the city runs by gravity into a well, from which it is pumped into the Lake by an electrically-driven pump through a 36-inch sewer line, which enters the Lake about 25 feet from shore at the foot of Lincoln Street. This point is about one-half mile east of the water works intake pipe.

At East Chicago both the manufacturing and domestic sewage runs into the Calumet River.

The Whiting sewage flows directly into the Lake through three sewer outlets. A 36-inch sewer empties at the same place as a sewer of similar size which takes care of the sewage of Robertsdale. These outlets are close to the boundary line between Hammond and Whiting. There is another 36-inch sewer about one-half mile east of this. The combined drainage of both sewers takes care of the domestic sewage and storm flow of Whiting with the exception of that portion of the land occupied by the Standard Oil Company's plant. The sewage from this plant enters the Lake at the junc-

tion of the shore and shipping pier for the oil boats, through a 6-foot sewer which is 2,000 feet from the intake of the water supply of the city.

At Robertsdale the Glucose plant disposes of its sewage through a private sewer to the mouth of Wolf Lake.

The city of Hammond discharges its sewage into the Calumet River. The system is arranged in districts with each district having an outlet into the river. The city lies so low that the sewers are below the level of the river, and it is therefore necessary to deliver the sewage to pump wells, from which it is lifted into the river. This system is satisfactory when the pump is in operation, but much inconvenience is caused when the pump is not running by reason of sewage backing up and overflowing into basements and cellars.

Local Sources of Pollution.

The chief local sources of the pollution of the water of Lake Michigan in the vicinity of Lake County are:

1. The discharge of the Calumet River and harbor water at Indiana Harbor into the Lake.
2. The discharge of local sewers into the Lake.
3. The shore wash and the stirring up of the bottom of the Lake by winds and currents.
4. The dumping of dredged material.
5. Accidental pollution by steamboats, sailing vessels and other shipping.

The Calumet River is in reality an open trunk sewer running through the cities of East Chicago and Hammond. In some places, notably at the distillery at Hammond, the volume of obnoxious decomposing organic matter is very great and becomes a public nuisance. The fact that this stream of sewage flows directly through the city of Hammond renders life along its banks unpleasant and even dangerous, as an excellent opportunity is afforded for flies to carry disease to the tables of private families and restaurants that are near its banks. The river is also a breeding ground for mosquitoes. The amount of sewage that enters the Calumet River is not known at the present time, and can be determined only with great difficulty. For this reason it is impossible to estimate the amount of sewage that is being emptied into the Lake by the river. That the quantity is at times very large is plainly shown by the immense streams of turbid water that are carried miles into the Lake.

The amount of sewage entering the Lake from the harbor at Indiana Harbor is comparatively small, but that it has its effect upon the lake water is shown by the bacterial analyses.

Discharge of Local Sewers Into the Lake.

The most important and most damaging of these sewers is that at the Glucose plant. The average daily discharge is about 2,300,000 gallons. The sewage is in the form of wash and steep waters used in the preparation of the grain and in the processes of manufacture. It contains large quantities of the nitrogenous principles of the corn and other ingredients which evidently form an excellent culture media upon which bacteria live and multiply. An analysis of the solid matter in the waste water showed a protein content of 36.30%. It is most surprising that this valuable product is allowed to go to waste. At the mouth of the sewer the maximum number of bacteria observed was 3,500,000 per c.c., the minimum 200,000 per c.c., while the average number during the period of investigation was 1,811,000 per c.c., with indications of *B. coli* always present. This bacterial content is by far in excess of that of the Calumet River, with an average of 86,480, and is also much higher than that of the south fork of the Chicago River, commonly known as Bubbly Creek, which receives the waste material of the stock yards and is considered one of the most vile bodies of water in this section. The average bacterial count shown at the stock yards filter plant was 500,000 per c.c. An instance of the effect of this sewer upon the purity of the Lake water is clearly shown on chart No. 5 by the extreme bacterial count on September 4th at the four-mile point off from Indiana Harbor.

The waste water also deposits large amounts of the husk of the corn for some distance around the mouth of the outlet. This organic material in a decomposing and putrefying condition is found in quantities in front of the Hammond pumping station. An analysis of this debris showed a protein content of 12.9%. As 45.4% of this material was inorganic, the actual protein content of the organic portion was 23.2%.

The anchor line on the buoy marking the Hammond water works intake collected a large quantity of this refuse matter and was the only anchor line of all the sampling points that was not perfectly clean. The odor of putrefaction emanating from this sewer is noticeable for a considerable distance, and at times, with northerly winds, passengers on trains passing through Roberts-

dale are made sick. On September 17th the odor of the water drawn from faucets in the city of Hammond was so strong that many complaints were made to the water company. A sample of water drawn in this way by Dr. W. D. Weis, the Secretary of the Hammond Board of Health, and now in possession of the Water Laboratory of the State Board of Health, still retains its characteristic odor. On September 18th, during the period of sampling, there was no sewage entering the Lake and there was no odor present. On this day the bacterial count was reduced to 900,000, but later in the day, when the boat for collecting samples was returning to South Chicago, the odor was again very distinct some distance off shore.

On September 19th there was no sewage entering the Lake at the time of sampling, and the odor was again absent and the bacterial count was only 240,000 bacteria per c.c.

The streams of sewage from this source have a distinct color, and the line of demarkation between it and the lake water is extremely sharp. A power boat passing through these streams leaves a line of bubbles on the surface marking the exact course traveled. When going in a direct current the sewage does not seem to mix readily with the lake water, and the streams are very distinct until cross-currents are encountered.

The effluent from this sewer is the most damaging and the most far-reaching of any source of pollution along the Indiana lake front, and under the conditions now obtaining the citizens of Hammond are being served with a nitrogenous broth under the guise of drinking water.

The two 36-inch sewers entering the Lake at the Whiting and Hammond boundary line discharge an average of one and one-half million gallons daily into the Lake. On account of the extreme dry weather, the amount of sewage entering the Lake during the period of investigation was much below the average, and for this reason the bacterial counts were low and the sewage could not be traced for more than a mile into the Lake. The 36-inch sewer at Indiana Harbor, which discharges about 1,000,000 gallons daily, showed exactly the same condition. The effect of these sewers will undoubtedly be much greater under reverse weather conditions, but cannot be compared with the effect of the glucose sewer. The exact bacterial counts at these sewers could not be ascertained as the outlets were too far into the Lake to be reached from the shore, and it was impossible to reach them from a boat on account of the

shallow water. For these reasons the samples were collected about 50 feet in front of the sewer after much dilution had taken place.

The private 6-foot sewer of the Standard Oil Company, which discharges about 18,000,000 gallons daily into the Lake, has an especially damaging influence upon the water supply of Whiting. As has already been shown, there are times when four-fifths of the water supply of the city is composed of this sewage. The bacterial content of this sewage is often very low, owing to the antiseptic influences of some of the refuse material, especially at times when it contains sulphuric acid. The minimum count showed but 10 bacteria per 1 c. c., but at other times the sewage was not benefited by these influences and the maximum count showed 500,000 per c.c. The average during the period of investigation was 162,821 per c.c.

Shore Wash and Stirring Up of the Bottom.

During storms and windy weather the bottom is stirred up by wave action, and suspended matter is carried back and forth between the shore and the water intake. At such times any deposits like the debris from the Glucose plant and the dredgings from the Calumet River along the shore are carried out either by direct currents or by counter currents in reverse winds, and materially increase the turbidity of the water. While such material is usually innocuous, because of its peculiar character, and the increased turbidity it gives the Lake, it often renders the water unsatisfactory for drinking purposes.

The Dumping of Dredged Material.

On account of the very sluggish motion of the Calumet River, the occasional up-stream currents and the large amount of silt brought into it, the Great Lakes Dredging and Dock Company is almost continually dredging out the bottom of the river in order that the required depth may be maintained for the big freight and ore boats to navigate. This dredged material is carried out in scows and dumped into the Lake. This dumping ground covers the territory shown on chart No. 2, reaching from the mouth of the Calumet River on the west in a diagonal line nearly to the Hammond intake on the east. The territory allotted for the dumping of this material is understood to be much smaller and much nearer shore, but it is stated by the superintendent of the Hammond pumping station that there have been times when these scows were dumped within a few hundred feet of the Hammond intake. On September 22 two scows were emptied into the Lake at sampling

point No. 33, and on September 24th it was observed that two scows were dumped a few feet north of sampling point No. 32.

The effect upon the purity of the Lake from the dumping of this material is very damaging, as is shown by the high bacterial counts observed at points Nos. 32, 33 and 34 at all times without relation to the direction of the wind and current. This exceptional condition obtains at no other lake points. The average bacterial count at point No. 32 was 24,322; at point No. 33, 30,385, and at point No. 34 it was 19,228. There were occasional times during very calm weather when the bacterial count was quite low. The dumping of this material into the Lake so close to Hammond intake is very liable to contaminate the city water, since particles held in suspension and water that is mixed with this material is carried near the water intake. This dumping should be carefully regulated, since, as this material is principally clay and muck, the smallest particles will be carried great distances.

Accidental Pollution from Boats.

The pollution of the city supplies in Lake County by boats is of little importance as no large pleasure boats frequent the Lake. The only boats that pass near the intakes are small pleasure boats and the ore boats en route to and returning from the harbor at the Inland Steel Company's plant, which go within half a mile of the East Chicago intake. At Whiting the Standard Oil boats are filled within five hundred feet of the intake. At Hammond no large boats pass within two miles of the intake. While the probability of the city supplies being affected by such pollution is very slight, yet it is entirely possible for the dejecta of a typhoid convalescent to be thrown into the Lake a short distance or even directly over the water intake. This accidental pollution unfortunately is beyond city control. Federal legislation and supervision is needed to protect all water works supplies from such possibilities of contamination, and any measure that will protect the water consumer, such as the installment of a zone around water intakes over which shipping cannot pass, is both wise and necessary legislation.

Factors Which Affect the Self-Purification of Lakes.

There are several factors which tend to protect the water supply of a city against the pollution which the Lake receives.

First, there is the natural dilution of the small amount of sewage by the great volume of lake water that receives it, and with

which it is thoroughly mixed. The velocity of the current discharging into the Lake is usually so light that the sewage immediately diffuses throughout the surrounding mass of pure water. Under such conditions within a short time the original body of polluted water is so infinitely diluted as not to be detected by any change in the character of the lake water. But as there are several offsetting influences to the process of dilution, no computed table can be used for the purpose of determining the time or distance factor necessary to destroy all danger of pollution. Some of the most important of these influences are currents caused by the wind, and piers which deflect the natural current in an opposite direction. Throughout Lake County the amount of sewage entering the Lake is so great and from so many sources that the strong reverse currents from streams do not allow it to mix with the water, and the intakes are so near the shore that the factor of dilution is of little value to these cities.

The natural death of the pathogenic organisms also affords a great protection to the purity of the Lake. Inasmuch as there is practically no food in the pure water for these bacteria to live on, they gradually die instead of multiplying as they would under the same conditions of temperature in a more suitable media. Just how long these organisms will live it is impossible to say, but it is shown on the chart of the "Longevity of Typhoid Bacilli" that in experiments done under favorable conditions some of the bacilli have lived for twenty days. As has already been shown, the sewage from the Glucose plant affords a good media for the growth of bacteria, and it is probable that in this water the number of bacteria present will be increased and their life prolonged until the dilution has become so great that the food value is lost, after which the gradual diminution by natural death will commence.

The process of sedimentation is another important factor in water purification. When the water is comparatively quiet there is a very rapid settling of the suspended matter, the organic constituents and the bacterial life. This leaves the surface of the water, which is the first to be carried by the winds, to pass on as a comparatively good water. This sedimentation may be distributed again if the wind and wave action is great enough to reach the bottom, under which condition the pollution becomes even more concentrated than it was originally.

Sunlight also acts as an efficient sterilizing agent upon bacteria. Such action takes place very rapidly at the surface of the water, and as vertical currents are constantly bringing new layers of

water within the influence of the sun's rays, the aggregate effect of sunlight upon a mass of polluted water is to diminish greatly the bacterial content. Strong agitation, such as may be effected by storms, does not materially improve the sanitary quality of a water.

Bacterial Survey of Lake Michigan Bordering Lake County.

In order to know where the sewage came from and where it went, it was necessary to take samples at all sewer outlets and then to take similar samples at regular distances in every direction as far as pollution could be traced. The sampling points indicated on chart No. 2 have been previously explained. Samples from all of these points were collected and analyzed as nearly as possible every other day, for a period of eight weeks.

A comparison of the results obtained on different days shows considerable variation in the bacterial count, according to the direction and velocity of the wind and current.

The results show that the distribution of the sewage from the Calumet River ranges from the Chicago two-mile crib on the west to lake points opposite Hammond on the east and into the Lake as far as seven miles from shore. Unfortunately, there was at no time during the period of investigation a strong west wind. Such a wind would undoubtedly have driven the river effluent over the Hammond intake, for this distance is no greater than the distance to point No. 41, where the effects of the river have been shown. The bacterial counts on tables Nos. 11, 13, 20, 23, 25, 26 and 27 at points Nos. 45, 46 and 47 show that the water has been influenced by the river effluent. That the sewage reached point No. 41 is shown on tables Nos. 13 15, 17, 18 and 24. While some of these counts are as low as 50 bacteria per c.c. in some of the tables, yet this point is seven miles into the Lake and, in a comparison with the results obtained at Michigan City, where the water was practically sterile at points one mile from shore, a count of 50 is abnormally high. In table No. 15 the bacterial count at this point reached 15,000 per c.c., a figure indicative of gross pollution.

That the river water crosses the line of sampling points off the Hammond pumping station is shown in tables Nos. 8 and 15, where point No. 29 has much higher counts than either point No. 28 or point No. 30.

The high counts at points Nos. 32, 33 and 34 are attributed to the dumpings of scows and the Glucose sewer rather than to the Calumet River, since as there were no strong west winds at any

time during the work, although with a prevailing north wind small amounts of sewage coming out of the river seemed to follow eastward along the shore line. Because of these dumpings, no clear bacterial evidence was obtained that the glucose sewage went to the west, but on following the stream on September 26th it was seen to go into the Lake for about one-half a mile and then, meeting easterly currents, to be carried west along the shore. That this sewage went five miles into the Lake is shown in tables Nos. 13, 18 and 21, when it was found at every point between points Nos. 25 and 30, and that it traveled east, crossing the Whiting and Indiana Harbor lines, is shown in table No. 24 and chart No. 5.

While it is true that the effluent from the Standard Oil Sewer at Whiting has been traced by the oil on the water nearly to the Calumet River and east to Indiana Harbor, yet it affects principally the city of Whiting. This is due to the fact that there is not nearly the amount of flow into the Lake as in the case of the Calumet River, and but a comparatively small amount of domestic sewage goes into the Lake. It is true that the volume of its flow is several times that of the Glucose sewer, but as it contains no food substance for the bacteria to live on, they die and disappear much more rapidly. That the effects of this sewage inflow is very damaging to the character of the Whiting water supply is shown in tables Nos. 1, 2, 4, 5, 10, 12, 14, 18, 19, 22, 23, 25, 26 and 27. Tables Nos. 18 and 19 show its presence some miles out into the Lake.

The water supply of Indiana Harbor and East Chicago is of much better quality than that of either Whiting or Hammond, but it is far from being of the desired quality, and it is affected by the harbor effluent of the Inland Steel Company's plant, as is shown in tables Nos. 14, 16 and 18. Tables Nos. 19 and 22 show that the water at this intake is also affected by the Indiana Harbor 36-inch sewer.

In examining these tables and tracing the distribution of the sewage, it appears that it often goes in the opposite direction to the lake currents. This is accounted for by the very strong counter currents which have previously been explained. There is also an independent current running from west to east from two to four miles from shore, as is shown on chart No. 10, where the maximum, minimum and average bacterial counts at point No. 7, which is four miles from Indiana Harbor, are higher than those at point No. 6, three miles from shore, and at No. 8, the five-mile point. Again, the counts at points Nos. 16 and 17 are higher than those of Nos.

15 and 18, which are opposite Whiting, and point No. 29, which is four miles off Hammond shows a higher count than No. 28 and No. 30, the three and five mile points.

It is shown in these tables that the whole territory covered in this investigation is polluted most of the time. There was not a sampling point which did not on several days show much higher bacterial counts than are ever present in the normal lake water. An excellent example of this general pollution is shown in table No. 18, where all the bacterial counts are abnormally high. It will also be seen that on this date of sampling the Lake was very smooth. It is a noticeable fact that the distribution of sewage is more general when the Lake is calm than when it is rough. This is due, probably, to the fact that the currents are not broken by the wind and wave action, and so a much more complete diffusion of lake and sewage water takes place.

At the present time the small domestic sewers apparently have but little influence on the character of the lake water. This is due to the fact that in comparison with the larger ones in this section, they are hardly noticeable, and also to the extreme dry weather which kept the volume of sewage flow entering the Lake much lower than would be the case during periods of heavy rainfall. It must not be overlooked that even a small quantity of concentrated domestic sewage will have very damaging effects on the public water supplies of these cities.

After a careful analysis of all the data collected during this survey, it becomes readily apparent that the water supplies of Indiana Harbor, East Chicago, Whiting and Hammond, as at present taken from the Lake, are absolutely of no value from a sanitary standpoint, and that they are not safe for drinking at any time of the year.

The study of the distribution of the sewage also shows conclusively that it will be of no value to extend the intakes farther into the Lake until the present sources of pollution are permanently removed.

Summary.

The chemical and bacteriological survey of the southern portion of Lake Michigan adjoining Lake County shows the water of the Lake to be grossly polluted and unfit for use as a source of water supply for drinking or domestic purposes.

This deplorable condition of a once pure and potable body of water is due to the great volume of sewage and manufacturing waste being poured into it by (a) the Calumet River, (b) the Glu-

cose sewer, (c) the Standard Oil Company's sewer, (d) the sanitary sewers of the cities of Indiana Harbor, East Chicago, Whiting and that portion of Hammond known as Robertsdale, (e) the dumping of material dredged from the Calumet River.

There are no uniform currents in this portion of the Lake, and sewage once deposited in it may be carried in any direction, depending upon (a) the direction and force of the wind, (b) the lake level, (c) the direction of temporary and induced currents.

The sewage from any one point along the shore may be carried over the intake of any of the water supplies. For this reason the abatement of any one nuisance will not afford a great measure of relief, as the remaining sources of pollution will be amply sufficient to render the water unsafe.

The laying of intakes further into the Lake will not provide an adequate protection against impure water, since the zone of pollution extends more than five miles from shore.

The character of the water of Lake Michigan adapts it so well for all domestic and industrial uses that cities along its shore cannot longer afford to pollute it and to destroy it as a water supply. The discharge of all unpurified sewage or industrial wastes into the Lake must be stopped and the former purity of the water regained.

No single municipality can hope adequately to handle the situation. The problem of a purified and permanently potable Lake Michigan can only be solved by the concerted efforts of every city on its southern shore, aided by the joint action of the States of Illinois and Indiana.

Recommendations.

As the result of the study of the pollution of Lake Michigan and the condition of the public water supplies of the cities of Hammond, East Chicago and Whiting, we suggest the following possible means by which the situation may be remedied:

(1) The installation of gravity or mechanical filters to purify the water of each of the present systems.

(2) The installation of sewage disposal plants to purify the sewage or otherwise destroy the injurious bacteria now being poured into the Lake.

(3) Such action as will stop permanently the dumping of dredged material within five miles of any water intake.

(4) The abatement of the nuisance known as the Glucose sewer.

(5) The abandonment of the Lake as source of water supply

and the use of deep well water, undoubtedly to be found in sufficient abundance for present needs.

(6) The opening of a channel to the Illinois River to convey all sewage away from the Lake.

The first proposal is obviously not to be considered because of the cost of constructing and maintaining purification plants for a series of independent cities and the greatly increased population that will soon occupy the entire lake front. It is furthermore not practical to pollute a naturally pure water and then by artificial methods to remove the contaminating material.

The second proposal is equally unsatisfactory. While it is possible to purify sewage to such an extent that it is not disease-producing, it is not possible so to treat manufacturing wastes that they will not increase the mineral constituents of the water. Moreover, while it is better to drink filtered than raw sewage, both practices are repellent and to be avoided if possible.

The third proposal is entirely feasible, and should at once be carried out. This is also true of the fourth suggestion.

The fifth suggestion, that the Lake be abandoned and a water supply sought elsewhere, is not tenable. No necessity should be so great as to require the abandonment of one of the largest bodies of potable water in the world and in its place the installation of a deep-well system of doubtful adequacy.

The last proposal is the most feasible and undoubtedly the most practicable. If the necessary Federal and State permission can be secured to allow the carriage of sewage across the line into an adjoining State, it is probable that the engineering problems can be solved. Some such action is the more necessary because the city of South Chicago and the Illinois population now sewerage into the Calumet must act with the Indiana cities if the pollution of the Lake is to be stopped.

Whatever action is taken, either to dispose of sewage or to obtain a pure water supply, must be undertaken jointly by all the cities interested. To this end, legislation authorizing the establishment of a sanitary district is advisable, and is suggested as the first step toward the betterment of civic sanitary conditions of Lake County.

Respectfully submitted,

H. E. BARNARD,

Chemist to the State Board of Health.

J. H. BREWSTER,

Water Chemist.

LABORATORY OF HYGIENE
STATE BOARD OF HEALTH

Charts and Tables Accompanying
Lake County Survey

CHART No. 1
 Diagram Showing Typhoid Death Rates per 100,000 in Lake County Ind.
 From 1903 To 1908

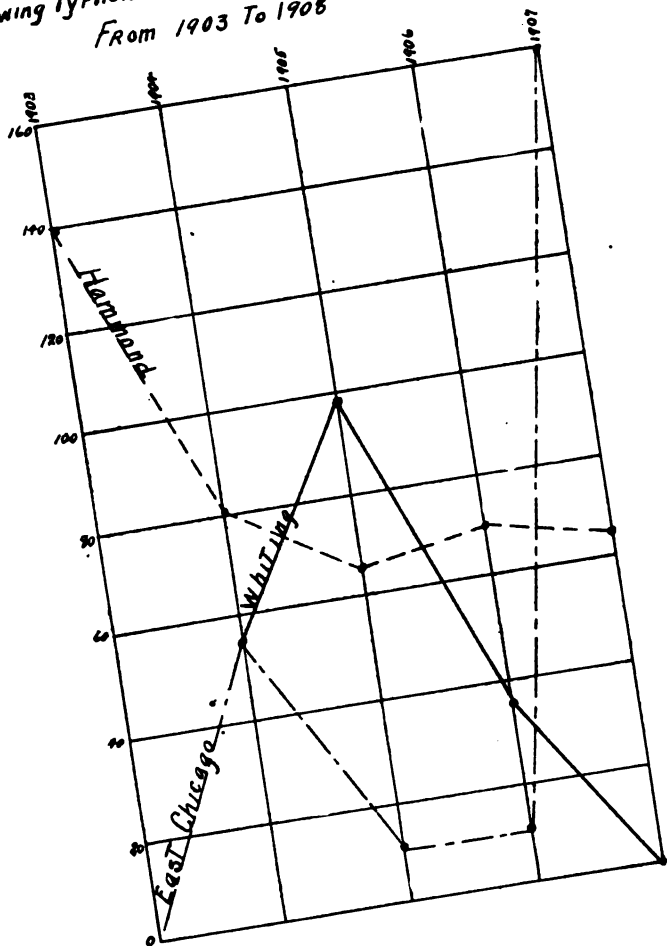


CHART No. 1
 Diagram Showing Typhoid Death Rates per 100,000 in Lake County Ind.
 From 1903 To 1908

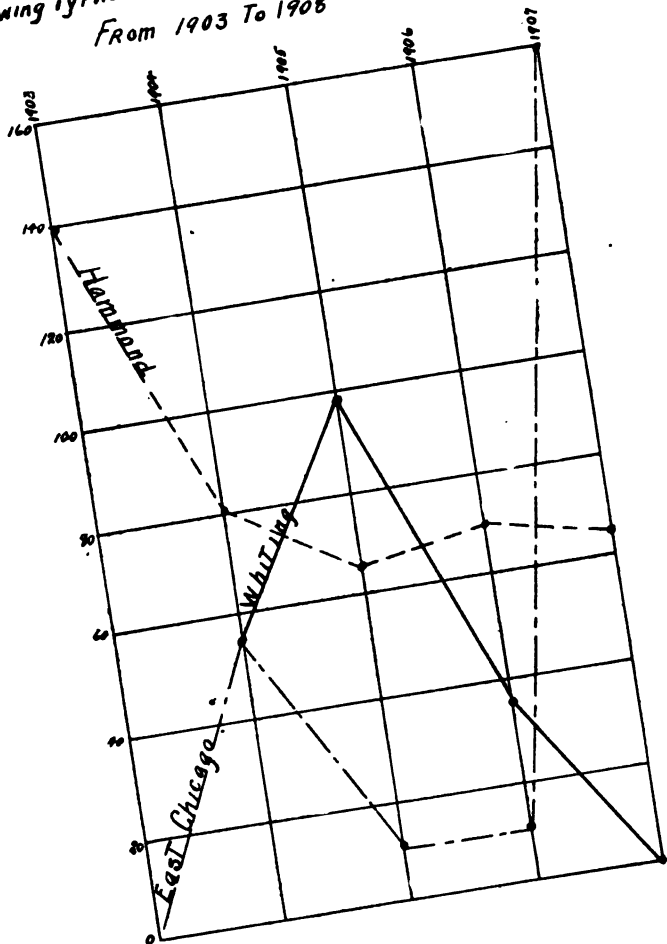


Chart No. 3.
Lake County, Ind.
Diagram Showing Maximum Bacterial
Counts at all Sampling Points.
Aug. 9, 1908 to Sept. 22, 1908.

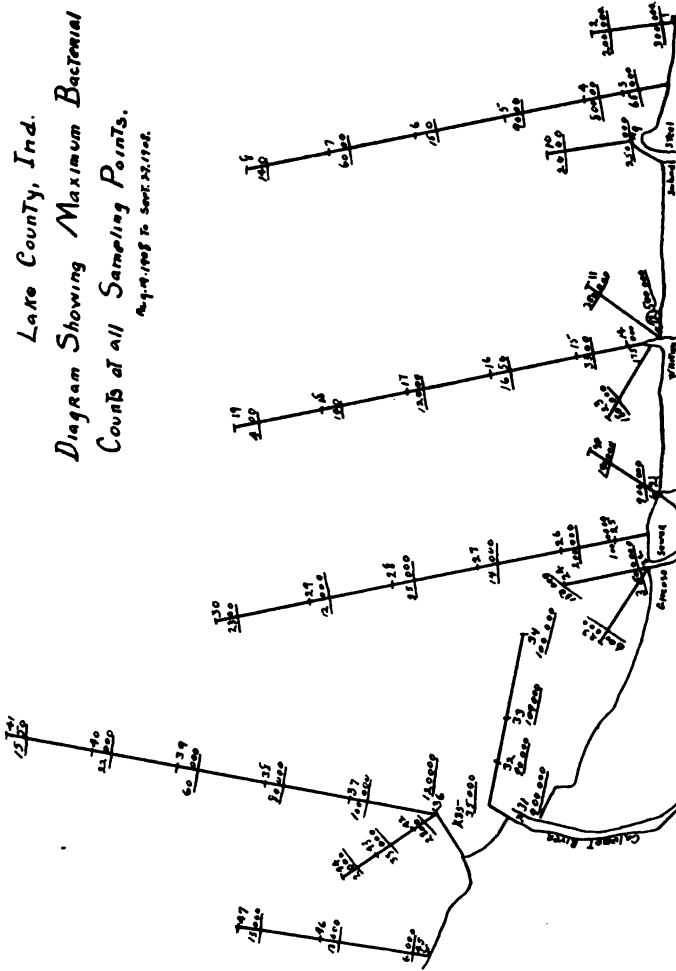


Chart No 6.
Lake County, Ind.
Showing Distribution of B.C.M.
Aug. 1st, 1907 to Sept. 30, 1907.

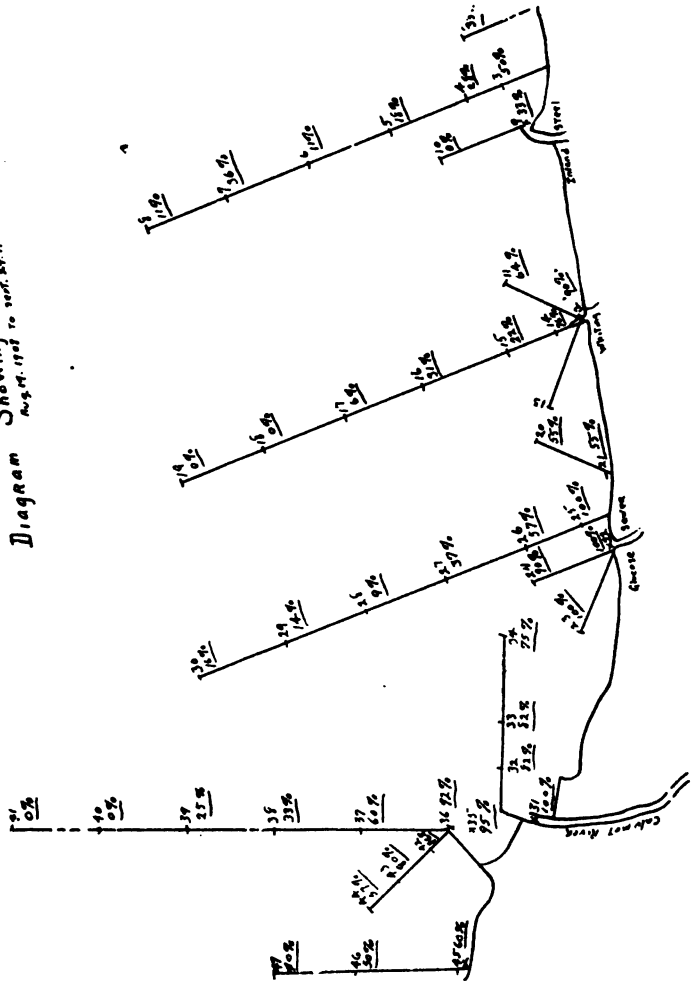


Chart No. 7.
Lake County Ind.
Distribution of Sewage by Westerly Currents.

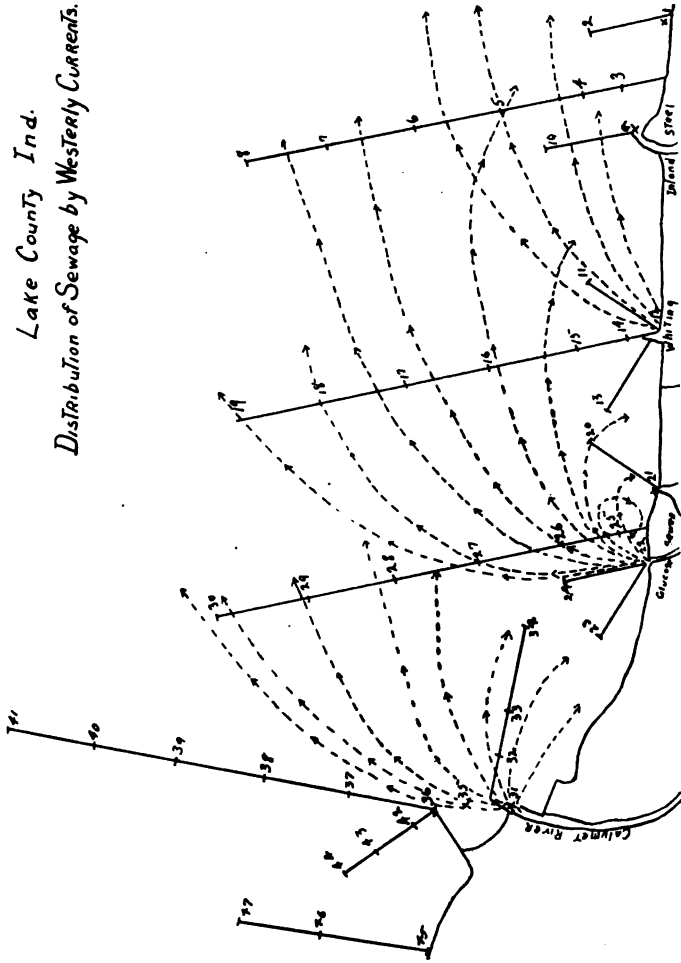


Chart No. 8.
Lake County Ind.
Distribution of Sewage by Easterly Currents.

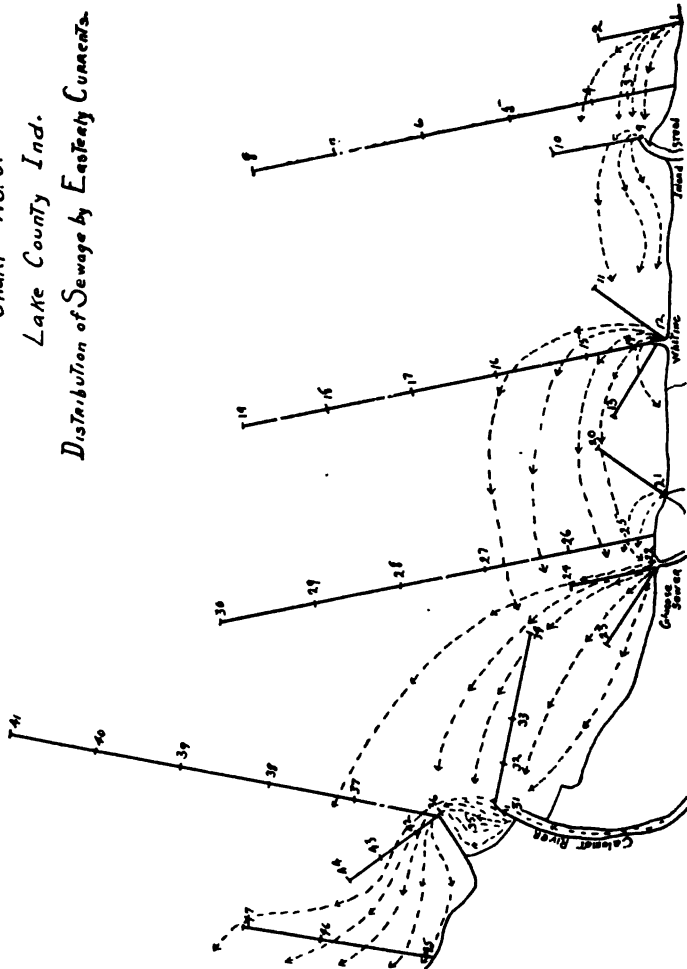
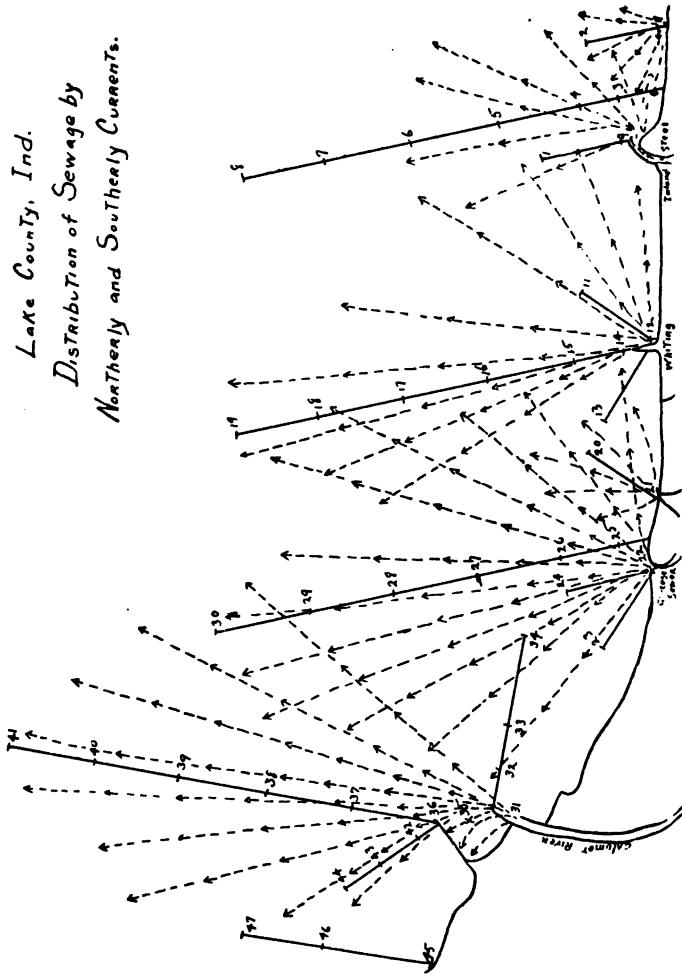
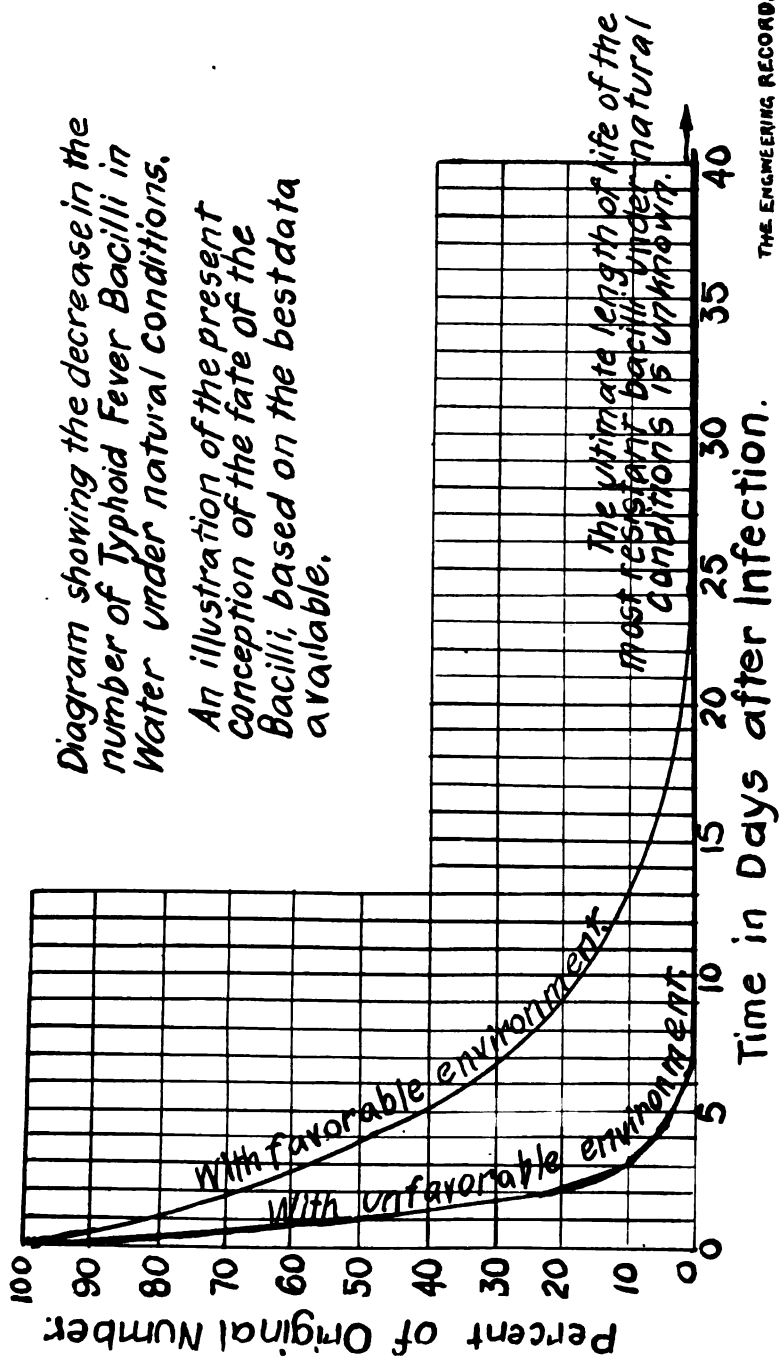


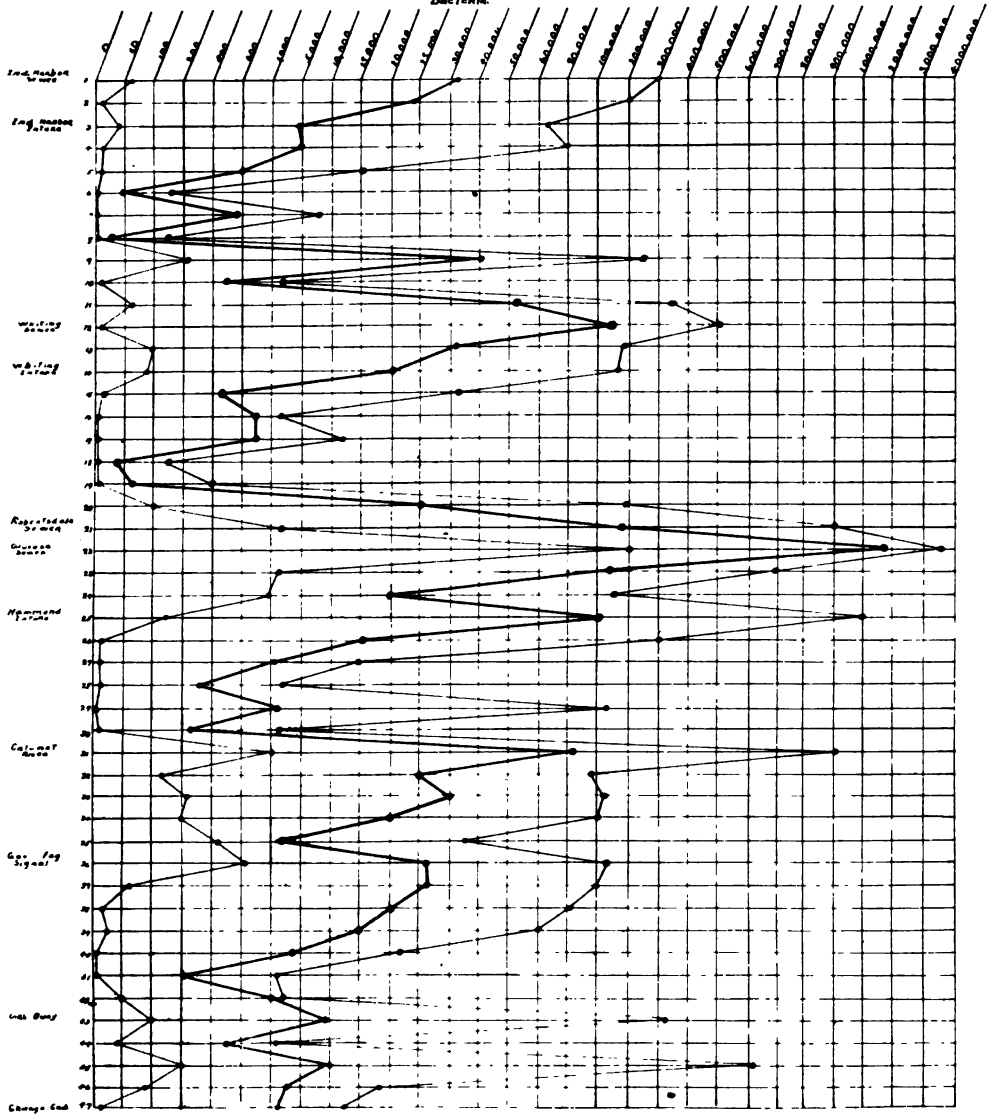
Chart No. 9.
 Lake County, Ind.
 Distribution of Sewage by
 Northernly and Southernly Currents.





The Longevity of Typhoid Bacilli.

Diagram Showing Maximum, Minimum and Average Bacterial Counts in Lake Michigan Water
From Aug. 19, 1908 To Sept. 27, 1908.



KEY TO SAMPLING POINTS.

1. Indiana Harbor Sewer.
2. One mile into the Lake from Indiana Harbor Sewer.
3. East Chicago Water Works Intake.
4. One mile from shore N. 23° E. at East Chicago Water Works.
5. Two miles from shore N. 23° E. at East Chicago Water Works.
6. Three miles from shore N. 23° E. at East Chicago Water Works.
7. Four miles from shore N. 23° E. at East Chicago Water Works.
8. Five miles from shore N. 23° E. at East Chicago Water Works.
9. Mouth of Harbor at Inland Steel Plant.
10. One mile from Harbor at Inland Steel Plant.
11. One mile N. 67° E. from 6-foot sewer at Whiting.
12. Whiting 6-foot sewer.
13. One mile N. 23° W. from Whiting 6-foot sewer.
14. Whiting Water Intake.
15. One mile from shore N. 23° E. at Whiting Water Works.
16. Two miles from shore N. 23° E. at Whiting Water Works.
17. Three miles from shore N. 23° E. at Whiting Water Works.
18. Four miles from shore N. 23° E. at Whiting Water Works.
19. Five miles from shore N. 23° E. at Whiting Water Works.
20. One mile N. 67° E. from Robertsdale and Whiting Sewer.
21. Robertsdale and Whiting Sewer.
22. Glucose Sewer.
23. One mile N. 23° W. from Glucose Sewer.
24. One mile N. 23° E. from Glucose Sewer.
25. Hammond Water Works Intake.
26. One mile from shore N. 23° E. at Hammond Water Works.
27. Two miles from shore N. 23° E. at Hammond Water Works.
28. Three miles from shore at Hammond N. 23° E. Water Works.
29. Four miles from shore at Hammond N. 23° E. Water Works.
30. Five miles from shore at Hammond N. 23° E. Water Works.
31. Mouth of Calumet River.
32. One-half mile S. 67° E. from Calumet River.
33. One mile S. 67° E. from Calumet River.
34. Two miles S. 67° E. from Calumet River.
35. South Chicago Harbor, half way between Harbor and Government Pier.

36. Government Fog Signal.
37. One mile N. 45° E. from Government Fog Signal.
38. Two miles N. 45° E. from Government Fog Signal.
39. Three miles N. 45° E. from Government Fog Signal.
40. Four miles N. 45° E. from Government Fog Signal.
41. Five miles N. 45° E. from Government Fog Signal.
42. One-half mile N. 23° E. from Government Fog Signal.
43. Gas Buoy, approximately one mile N. 23° E. from Government Fog Signal.
44. One and one-half miles N. 23° E. from Government Fog Signal.
45. Brighton Beach.
46. Temporary crib at New Hyde Park Crib.
47. Chicago Two-mile Crib.

TABLE No. 1.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 19, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3.	800 A.	500	+	Wind north, high.
4.	801 A.	85	—	
5.	802 A.	80	—	
6.	803 A.	46	+	Lake very rough.
14.	804 A.	4000	+	
15.	805 A.	100	—	
16.	806 A.	150	+	Current northwest to southeast
17.	807 A.	35	—	
25.	808 A.	2500	+	
26.	809 A.	55	+	
27.	810 A.	40	—	
28.	811 A.	35	—	
31.	812 A.	3600	+	
35.	813 A.	2500	+	
42.	814 A.	1000	—	
44.	815 A.	1200	+	
*	816 A.	5000	+	

*Calumet River at Life Saving Station.

TABLE No. 2.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 20, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
2.	817 A.	1430	+	Wind east, fresh.
4.	818 A.	100	—	
5.	819 A.	60	—	
6.	820 A.	38	+	Lake rough.
14.	821 A.	1800	+	
15.	822 A.	130	—	
16.	823 A.	85	—	
17.	824 A.	25	—	
25.	825 A.	3000	+	Current east to west.
26.	826 A.	125	—	
27.	827 A.	300	—	
28.	828 A.	90	—	
31.	829 A.	33000	+	
35.	830 A.	600	+	
42.	831 A.	120	+	
44.	832 A.	40	—	

TABLE No. 3.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 21, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
3.	833 A.	400	+	Wind south, light.
4.	834 A.	70	—	
5.	835 A.	60	—	
6.	836 A.	40	—	
14.	837 A.	500	+	Lake smooth.
15.	838 A.	100	+	
16.	839 A.	30	—	
17.	840 A.	20	—	
18.	841 A.	17	—	Current south to north.
25.	842 A.	1800	+	
26.	843 A.	450	+	
27.	844 A.	65	—	
28.	845 A.	15	—	
31.	846 A.	6000	+	
35.	847 A.	3000	+	
42.	848 A.	2000	+	
44.	849 A.	40	—	

TABLE No. 4.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 22, 1908

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3.	850 A.	1600	+	Wind north, high.
4.	851 A.	20	+	
5.	852 A.	70	—	
6.	853 A.	10	—	
14.	854 A.	3000	+	Lake very rough
15.	855 A.	85	—	
16.	856 A.	74	—	
17.	857 A.	83	—	
25.	858 A.	1200	+	Current north to south.
26.	859 A.	230	—	
27.	860 A.	95	+	
28.	861 A.	60	—	
31.	862 A.	5000	+	Current north to south.
35.	863 A.	3500	+	
42.	864 A.	200	—	
44.	865 A.	250	+	

TABLE No. 5.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 24, 1908.

Sampling Pint.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
3.	866 A.	400	—	Wind east, high.
4.	867 A.	237	+	
5.	868 A.	85	—	
6.	869 A.	25	—	
14.	870 A.	3000	+	
15.	871 A.	165	+	
16.	872 A.	40	+	Lake rough.
17.	873 A.	35	—	
25.	874 A.	2250	+	
26.	875 A.	650	+	
27.	876 A.	110	+	
28.	877 A.	15	—	
31.	878 A.	1500	+	Currents east to west.
35.	879 A.	3500	+	
42.	880 A.	2800	+	
44.	881 A.	2000	+	

TABLE No. 6.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 25, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3.	882 A.	100	+	Wind northeast, high,
4.	883 A.	350	+	
5.	884 A.	Over growth.	—	
6.	885 A.	40	—	Lake very rough,
14.	886 A.	300	+	
15.	887 A.	65	+	
16.	888 A.	1300	+	General current running from east to west,
17.	889 A.	25	—	
25.	890 A.	250	+	
26.	891 A.	25	—	There was a belt between the one and four mile points that had a counter current from west to east.
27.	892 A.	17	+	
28.	893 A.	12	—	
31.	894 A.	3500	+	
35.	895 A.	1000	+	
42.	896 A.	50	+	
44.	897 A.	500	+	

TABLE No. 7.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 26, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
3.	898 A.	80	+	Wind northeast, high.
4.	899 A.	75	—	
5.	900 A.	80	—	
6.	901 A.	95	—	
14.	902 A.	110	+	Lake very rough.
15.	903 A.	45	—	
16.	904 A.	11	—	
17.	905 A.	300	—	
25.	906 A.	500	+	
26.	907 A.	275	—	
27.	908 A.	125	—	
28.	909 A.	20	—	
31.	910 A.	4000	+	
35.	911 A.	430	—	
42.	912 A.	450	+	
44.	913 A.	60	—	
*	914 A.	1500	+	

*3½ miles from Whiting.

TABLE No. 8.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 27, 1908

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3.	915 A.	80	+	Wind south, light.
4.	916 A.	40	+	
5.	917 A.	22	+	
6.	918 A.	15	—	Lake smooth.
7.	919 A.	12	+	
8.	920 A.	Liquefied.	—	
14.	921 A.	150	—	Current southeast to northwest.
15.	922 A.	20	—	
16.	923 A.	Liquefied.	—	
17.	924 A.	Liquefied.	—	At South Chicago the current from the Calumet apparently went northeast for some distance, showing at point 29, number 931 A.
18.	925 A.	15	—	
19.	926 A.	20	—	
25.	927 A.	Over growth.	+	
26.	928 A.	50	—	
27.	929 A.	250	+	
28.	930 A.	35	—	
29.	931 A.	12000	+	
30.	932 A.	80	+	

TABLE No. 9.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 28, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	933 A.	60	—	Wind south, high.
2.	934 A.	45	—	
9.	935 A.	6,000	+	Lake smooth.
10.	936 A.	40	—	
11.	937 A.	250	+	
12.	938 A.	96,000	+	
13.	939 A.	100	—	Current east to west.
14.	940 A.	80	—	
20.	941 A.	170	+	
21.	942 A.	50,000	+	The Calumet River turned around the Government Pier, going northwest along the shore.
22.	943 A.	2,000,000	+	
25.	944 A.	14,000	+	This belt did not carry outside of the gas buoy, which is point No. 43.
31.	945 A.	23,000	+	
36.	946 A.	7,000	+	
38.	947 A.	20	—	
39.	948 A.	35	—	
41.	949 A.	10	—	
*	950 A.	400	+	

*100 yards in front of Whiting Sewer.

TABLE No. 10—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 29, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3.	951 A.	40	—	Wind southeast, light.
4.	952 A.	15	—	
5.	953 A.	35	—	
6.	954 A.	13	—	
7.	955 A.	16	—	
8.	956 A.	10	—	Lake smooth.
9.	957 A.	550	+	
10.	958 A.	20	—	
11.	959 A.	60	—	
12.	960 A.	500,000	+	
13.	961 A.	80,000	—	
14.	962 A.	60,000	+	
15.	963 A.	14	—	
16.	964 A.	32	—	
17.	965 A.	60	—	
18.	966 A.	21	—	
19.	967 A.	20	—	
20.	968 A.	100	+	
21.	969 A.	4,500	+	
22.	970 A.	3,000,000	+	Current east to west.
25.	971 A.	700	+	
26.	972 A.	10	—	
27.	973 A.	20	—	
28.	974 A.	41	—	
29.	975 A.	8	—	
30.	976 A.	32	—	
31.	977 A.	75,000	+	

TABLE No. 11.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, AUGUST 31, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
25.	978 A.	950	+	Wind southeast, light.
26.	979 A.	330	+	
27.	980 A.	150	—	
28.	981 A.	30	—	Lake smooth.
29.	982 A.	15	—	
30.	983 A.	20	—	
31.	984 A.	65,000	+	Current southeast to northwest.
32.	985 A.	33,000	+	
36.	986 A.	1,000	+	
37.	987 A.	250	—	The Calumet River formed distinct current around Government pier covering point No. 43 and could be seen in a northwest course for some distance.
38.	988 A.	200	—	
39.	989 A.	400	—	
40.	990 A.	95	—	
41.	991 A.	20	—	
43.	992 A.	33,000	+	
45.	993 A.	20,000	+	
46.	994 A.	8,000	+	
47.	995 A.	1,200	—	

TABLE No. 12.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 1, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	996 A.	70	—	Wind north, fresh.
2.	997 A.	10	—	
3.	998 A.	220	—	
4.	999 A.	125	—	Lake rough.
5.	1000 A.	95	—	
6.	1001 A.	30	—	
7.	1002 A.	5	—	Current southeast to northwest.
8.	1003 A.	6	—	
9.	1004 A.	3,000	+	
10.	1005 A.	80	—	The effluent from the Whiting sewer, point No. 12, was carried along the Standard Oil Co. pier and passed directly over the water intake, point No. 14.
11.	1006 A.	150,000	+	
12.	1007 A.	100,000	+	
13.	1008 A.	3,000	+	
14.	1009 A.	80,000	+	
15.	1010 A.	100	—	
16.	1011 A.	25	—	
17.	1012 A.	15	—	
18.	1013 A.	15	—	
19.	1014 A.	8	—	
20.	1015 A.	1,000	+	
21.	1016 A.	200,000	+	
22.	1017 A.	2,500,000	+	
24.	1018 A.	900	+	
25.	1019 A.	160	+	
26.	1020 A.	25	—	
27.	1021 A.	10	—	

TABLE No. 13.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. G. IN LAKE MICHIGAN WATER, SEPTEMBER 3, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
24.	1022 A.	120	+	Wind southeast, light.
25.	1023 A.	1,000,000	+	
26.	1024 A.	200,000	+	
27.	1025 A.	12,000	+	Lake smooth.
28.	1026 A.	900	+	
29.	1027 A.	550	+	
30.	1028 A.	300	+	Current south to north.
31.	1029 A.	900,000	+	
32.	1030 A.	5,500	+	
34.	1031 A.	2,500	+	The Glucose sewer went directly into the lake covering the entire Hammond line of sampling, being noticeable by the distinct colors of the water. The Calumet River worked to the north.
36.	1032 A.	650	+	
37.	1033 A.	200	+	
38.	1034 A.	250	+	
39.	1035 A.	200	+	
40.	1036 A.	100	—	
41.	1037 A.	50	—	
43.	1038 A.	1,000	+	
45.	1039 A.	1,000	+	
46.	1040 A.	800	+	
47.	1041 A.	175	+	

TABLE No. 14.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 4, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	1042 A.	2,000	+	Wind south, light.
2.	1043 A.	1,200	+	
3.	1044 A.	65,000	+	
4.	1045 A.	80,000	+	
5.	1046 A.	400	+	Lake smooth.
6.	1047 A.	27	—	
7.	1048 A.	6,000	+	
8.	1049 A.	50	—	
9.	1050 A.	250,000	+	Current southwest to northeast.
10.	1051 A.	180	—	
11.	1052 A.	1,500	+	
12.	1053 A.	70,000	+	
13.	1054 A.	100	—	
14.	1055 A.	900	+	
15.	1056 A.	700	—	Glucose sewer had a distinct current for about two miles before mixing with the lake water, going between points No. 25 and No. 26, passed over point No. 17 and is evident from the analysis reached point No. 7.
16.	1057 A.	6	—	
17.	1058 A.	12,000	—	
18.	1059 A.	10	—	
19.	1060 A.	20	—	
20.	1061 A.	1,300	+	
21.	1062 A.	75,000	+	
22.	1063 A.	200,000	+	
23.	1064 A.	7,000	+	
24.	1065 A.	10,000	+	
25.	1066 A.	6,000	+	
26.	1067 A.	85,000	+	
27.	1068 A.	2,000	—	
28.	1069 A.	110	—	
29.	1070 A.	30	—	
30.	1071 A.	20	—	

TABLE No. 15.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 5, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
25.	1072 A.	15,000	+	Wind southwest, light.
26.	1073 A.	400	+	
27.	1074 A.	20	—	
28.	1075 A.	50	—	
29.	1076 A.	2,000	—	Lake smooth.
30.	1077 A.	20	—	
31.	1078 A.	18,000	+	
32.	1079 A.	22,000	+	
33.	1080 A.	20,000	+	Current southwest to northeast.
34.	1081 A.	6,000	+	
36.	1082 A.	120,000	+	
37.	1083 A.	90,000	—	
38.	1084 A.	80,000	—	
39.	1085 A.	55,000	—	A current from the Calumet River evident
40.	1086 A.	22,000	—	carried over to point No 29
41.	1087 A.	1,500	—	
43.	1088 A.	18,000	+	
45.	1089 A.	60,000	—	
46.	1090 A.	90	—	
47.	1091 A.	115	—	

TABLE No. 16.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 9, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
1.	1092 A.	700	—	Wind southwest, light.
2.	1093 A.	900	—	
3.	1094 A.	2,500	—	
4.	1095 A.	1,000	—	
5.	1096 A.	600	—	
6.	1097 A.	150	—	
7.	1098 A.	350	+	Lake smooth.
8.	1099 A.	140	—	
9.	1100 A.	1,000	+	
10.	1101 A.	350	—	
11.	1102 A.	2,000	+	
12.	1103 A.	100,000	+	
13.	1104 A.	2,000	—	Current southwest to northeast.
14.	1105 A.	900	—	
15.	1106 A.	3,300	—	
16.	1107 A.	8,000	+	
17.	1108 A.	250	—	
18.	1109 A.	140	—	
19.	1110 A.	45	—	The Glucose sewer carried into the lake as far as point No. 27, turned east covering points No. 15 and No. 16 and probably reached No. 7.
20.	1111 A.	2,600	—	
21.	1112 A.	900,000	+	
22.	1113 A.	3,500,000	+	
23.	1114 A.	600,000	+	
24.	1115 A.	1,500	+	
25.	1116 A.	4,000	+	
26.	1117 A.	6,000	+	
27.	1118 A.	8,000	+	
28.	1119 A.	400	—	
29.	1120 A.	150	—	
30.	1121 A.	225	—	

TABLE No. 17.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 10, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
25.	1122 A.	950,000	+	Wind southwest, light.
26.	1123 A.	72,000	+	
27.	1124 A.	1,000	—	
28.	1125 A.	25	—	
29.	1126 A.	75	—	
30.	1127 A.	Liquefied.	—	
31.	1128 A.	75,000	+	
32.	1129 A.	12,000	+	Lake smooth.
33.	1130 A.	20,000	+	
36.	1131 A.	50,000	+	
37.	1132 A.	60	—	
38.	1133 A.	75,000	+	
39.	1134 A.	60,000	—	
40.	1135 A.	90	—	
41.	1136 A.	30	—	Current southwest to northeast.
43.	1137 A.	250	+	
45.	1138 A.	2,400	+	
46.	1139 A.	330	—	
47.	1140 A.	23	—	

TABLE No. 18.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 11, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	1141 A.	300,000	+	Wind south, light.
2.	1142 A.	200,000	+	
3.	1143 A.	42,000	—	
4.	1144 A.	3,000	—	
5.	1145 A.	9,000	+	
6.	1146 A.	35	—	
7.	1147 A.	35	—	
9.	1148 A.	60,000	—	Lake very smooth.
10.	1149 A.	2,000	—	
11.	1150 A.	350,000	+	
12.	1151 A.	200,000	+	
13.	1152 A.	180,000	+	
14.	1153 A.	175,000	—	
15.	1154 A.	1,000	—	
16.	1155 A.	1,400	—	Current southwest to northeast.
17.	1156 A.	100	—	
18.	1157 A.	30	—	
19.	1158 A.	400	—	
20.	1159 A.	190,000	—	
21.	1160 A.	180,000	+	
22.	1161 A.	400,000	+	
23.	1162 A.	14,000	+	
24.	1163 A.	13,000	+	
25.	1164 A.	72,000	+	
26.	1165 A.	26,000	—	
27.	1166 A.	10,000	—	
28.	1167 A.	2,500	—	
29.	1168 A.	1,400	—	
30.	1169 A.	2,300	—	
31.	1170 A.	107,000	+	
32.	1171 A.	90,000	—	
33.	1172 A.	53,000	+	
34.	1173 A.	2,500	+	
36.	1174 A.	46,000	—	

TABLE No. 18—Continued.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
37	1175 A.	100,000	+	
38	1176 A.	36,000	—	
39.	1177 A.	10,000	—	
40.	1178 A.	6,000	—	
41.	1179 A.	60	—	
43.	1180 A.	120	—	
45.	1181 A.	4,000	—	
46	1182 A.	80	—	
47	1183 A.	450	—	

TABLE No. 19.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 14, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
3	1184 A.	900	+	Wind east, fresh.
4.	1185 A.	200	—	
5.	1186 A.	15	—	
6.	1187 A.	10	—	
7.	1188 A.	15	+	Lake rough.
8.	1189 A.	11	+	
9.	1190 A.	118,000	+	
10.	1191 A.	150	—	
11.	1192 A.	2,000	+	Current east to west.
14.	1193 A.	26,000	+	
15.	1194 A.	1,500	+	
16.	1195 A.	1,000	+	
17	1196 A.	300	+	
18	1197 A.	40	—	
19	1198 A.	45	—	

TABLE No. 20.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 15, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
23.	1199 A.	8,000	+	Wind northeast.
28.	1200 A.	260	—	
31.	1201 A.	75,000	+	
32.	1202 A.	5,500	+	Lake very rough.
33.	1203 A.	71,000	+	
34.	1204 A.	1,500	—	
36.	1205 A.	2,000	+	
37.	1206 A.	1,250	—	Current northeast to southwest.
43.	1207 A.	1,200	+	
45.	1208 A.	3,000	+	
46.	1209 A.	250	—	
47.	1210 A.	400	—	

TABLE No. 21.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 16, 1906.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
3.	1211 A.	4,500	+	Wind east, fresh.
14.	1212 A.	160	—	
20.	1213 A.	10,000	—	
21.	1214 A.	70,000	+	Lake choppy.
22.	1215 A.	2,900,000	+	
23.	1216 A.	6,000	+	
24.	1217 A.	3,500	—	Current north to south in lake.
25.	1218 A.	29,700	+	
26.	1219 A.	1,000	+	
27.	1220 A.	284	—	A counter current from the Calumet River within a mile of shore was distinguishable at Whiting.
28.	1221 A.	700	—	
29.	1222 A.	100	—	
30.	1223 A.	34	—	
31.	1224 A.	89,000	+	
32.	1225 A.	20,000	+	
33.	1226 A.	240	—	
34.	1227 A.	200	—	

TABLE No. 22.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 17, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	1228 A.	1,500	—	Wind southeast, light.
2.	1229 A.	1,000	—	
3.	1230 A.	2,000	—	
4.	1231 A.	900	—	
5.	1232 A.	68	—	Lake smooth.
6.	1233 A.	75	—	
7.	1234 A.	45	—	
8.	1235 A.	18	—	
9.	1236 A.	1,400	+	Current. Lake current was from north to south, but there was a counter current near shore from west to east.
10.	1237 A.	2,600	—	
14.	1238 A.	1,500	+	
15.	1239 A.	150	—	
16.	1240 A.	50	—	
17.	1241 A.	29	—	
18.	1242 A.	45	—	
19.	1243 A.	21	—	
22.	1244 A.	800,000	+	
25.	1245 A.	95,000	+	
26.	1246 A.	85	—	
27.	1247 A.	24	—	
28.	1248 A.	46	—	
29.	1249 A.	16	—	
30.	1250 A.	Over growth.	—	

TABLE No. 23.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 18, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
1.	1251 A.	4,800	+	Wind northeast, light.
3.	1252 A.	1,000	—	
11.	1253 A.	70,000	+	
12.	1254 A.	7,200	+	
14.	1255 A.	60,000	+	Lake smooth.
22.	1256 A.	900,000	+	
23.	1257 A.	2,600	+	
25.	1258 A.	60,000	+	
31.	1259 A.	200,000	+	
32.	1260 A.	2,500	+	Current northeast to southwest.
33.	1261 A.	18,000	+	
36.	1262 A.	1,000	+	
43.	1263 A.	100	—	
45.	1264 A.	500	—	
46.	1265 A.	2,400	+	
47.	1266 A.	1,700	+	

TABLE No. 24.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 19, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
20.	1267 A.	70,000	+	Wind southeast, light
21.	1268 A.	50,000	+	
22.	1269 A.	240,000	+	
24.	1270 A.	2,700	+	
25.	1271 A.	119,000	+	
26.	1272 A.	2,600	—	Lake smooth.
27.	1273 A.	14,000	+	
28.	1274 A.	1,300	—	
29.	1275 A.	14	—	
30.	1276 A.	22	—	
31.	1277 A.	1,000	—	Current southeast to northwest
32.	1278 A.	8,000	+	
33.	1279 A.	400	—	
36.	1280 A.	55,000	+	
37.	1281 A.	4,600	+	
38.	1282 A.	90	—	
39.	1283 A.	Liquefied.	—	
40.	1284 A.	30	—	
41.	1285 A.	108	—	

TABLE No. 25.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 22, 1906

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
1.	1286 A.	3,000	+	Wind south, fresh.
2.	1287 A.	1,100	—	
3.	1288 A.	50	—	
4.	1289 A.	40	—	Lake slightly rough.
5.	1290 A.	15	—	
6.	1291 A.	8	—	
7.	1292 A.	6	—	
8.	1293 A.	20	—	Slight rain in the afternoon
9.	1294 A.	1,500	+	
10.	1295 A.	10	—	
11.	1296 A.	2,000	—	
12.	1297 A.	10	—	
13.	1298 A.	1,500	+	
14.	1299 A.	4,600	+	Lake current north to south. There was a counter current along the shore from east to west.
15.	1300 A.	120	—	
20.	1301 A.	900	—	
21.	1302 A.	5,000	+	The oil from Whiting could be seen nearly to the Calumet River.
22.	1303 A.	2,500,000	+	
23.	1304 A.	297,000	+	
24.	1305 A.	5,500	+	
25.	1306 A.	400	+	
26.	1307 A.	2,640	+	The glucose sewer had a direct current to the west. The Calumet River taking the same general direction.
31.	1308 A.	200,000	+	
32.	1309 A.	140	—	
33.	1310 A.	1,100	+	
34.	1311 A.	10,000	+	
36.	1312 A.	6,000	+	
37.	1313 A.	24,000	+	
43.	1314 A.	3,000	+	
45.	1315 A.	200	—	
46.	1316 A.	3,500	+	
47.	1317 A.	500	+	

TABLE No. 26.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C. C. IN LAKE MICHIGAN WATER, SEPTEMBER 24, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
1.	1318 A.	12,000	+	Wind southeast, high.
2.	1319 A.	9,900	+	
3.	1320 A.	150	—	
4.	1321 A.	100	—	
5.	1322 A.	10	—	Lake smooth.
6.	1323 A.	6	—	
7.	1324 A.	4	—	
8.	1325 A.	2	—	
9.	1326 A.	300	—	Current southeast to northwest
10.	1327 A.	60	—	
11.	1328 A.	500	—	
12.	1329 A.	475,000	+	
13.	1330 A.	4,000	+	
14.	1331 A.	2,000	+	The oil from Whiting was again clearly seen around Hammond Water Works.
15.	1332 A.	180	—	
16.	1333 A.	1,650	+	
17.	1334 A.	6	—	
18.	1335 A.	8	—	
19.	1336 A.	1	—	
20.	1337 A.	1,000	+	
21.	1338 A.	60,000	+	
22.	1339 A.	2,400,000	+	
23.	1340 A.	120,000	+	
24.	1341 A.	3,000	+	
25.	1342 A.	7,000	+	
26.	1343 A.	400	+	
27.	1344 A.	50	—	
28.	1345 A.	15	—	
29.	1346 A.	5	—	
30.	1347 A.	6	—	
31.	1348 A.	35,000	+	
32.	1349 A.	59,400	+	
33.	1350 A.	100,000	+	
34.	1351 A.	100,000	+	
35.	1352 A.	20,000	+	

TABLE No. 26—Continued.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
37.	1353 A.	25,000	+	
38.	1354 A.	3,000	—	
39.	1355 A.	260	—	
40.	1356 A.	3	—	
41.	1357 A.	8	—	
43.	1358 A.	10,000	+	
45.	1359 A.	6,000	+	
46.	1360 A.	2,000	—	
47.	1361 A.	20	—	

TABLE No. 27.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, SEPTEMBER 26, 1908.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coli.	Remarks.
1.	1362 A.	4,000	+	Wind south, fresh.
2.	1363 A.	65	—	
3.	1364 A.	150	—	
4.	1365 A.	97	—	
5.	1366 A.	35	—	
6.	1367 A.	1	—	Lake smooth.
7.	1368 A.	6	—	
8.	1369 A.	3	—	
9.	1370 A.	250	—	
10.	1371 A.	80	—	
11.	1372 A.	900	+	
12.	1373 A.	80,000	+	Current south to north.
13.	1374 A.	1,300	+	
14.	1375 A.	500	+	
15.	1376 A.	60	—	
16.	1377 A.	110	—	

TABLE No. 27—Continued.

Sampling Point.	Laboratory Number.	Bacteria.	B. Coll.	Remarks.
17.	1378 A.	8	—	
18.	1379 A.	9	—	
19.	1380 A.	20	—	
20.	1381 A.	1,600	+	
21.	1382 A.	200	+	
22.	1383 A.	2,200,000	+	
23.	1384 A.	27,000	+	
24.	1385 A.	150,000	+	
25.	1386 A.	13,000	+	
26.	1387 A.	36,000	+	
27.	1388 A.	220	+	
28.	1389 A.	250	—	
29.	1390 A.	30	—	
30.	1391 A.	21	—	
31.	1392 A.	10,000	+	
32.	1393 A.	15,000	+	
33.	1394 A.	36,000	+	
34.	1395 A.	32,000	+	
36.	1396 A.	11,000	+	
37.	1397 A.	29,700	+	
38.	1398 A.	1,200	+	
39.	1399 A.	30	—	
40.	1400 A.	15	—	
41.	1401 A.	0	—	
43.	1402 A.	30,000	+	
45.	1403 A.	1,500	+	
46.	1404 A.	18,000	+	
47.	1405 A.	13,000	+	

TABLE No. 28.—LAKE COUNTY, IND.

NUMBER OF BACTERIA PER C.C. IN LAKE MICHIGAN WATER, AUGUST 19, 1908. TO SEPTEMBER 27, 1908.

Sampling Point.	Depth of Water in Feet.	Bacteria.			B. Coll Present During Test, Per Cent of Days..
		Maximum.	Minimum.	Average.	
1.	3	300,000	60	32,813	60
2.	24	200,000	10	23,802	33
3.	21	65,000	40	4,448	50
4.	24	80,000	15	4,803	28
5.	31	9,000	10	631	18
6.	31½	150	1	38	11
7.	30½	6,000	4	590	36
8.	33	140	2	29	11
9.	30	250,000	250	40,333	33
10.	24	2,000	10	506	0
11.	33	350,000	60	52,655	64
12.	2½	500,000	10	162,821	90
13.	26	180,000	100	32,222	55
14.	20	175,000	80	20,214	76
15.	30	3,300	20	435	22
16.	29	1,650	6	872	31
17.	31	12,000	6	824	6
18.	39½	140	8	32	0
19.	38	400	8	60	0
20.	31	190,000	100	25,334	55
21.	6	900,000	2,000	145,136	55
22.	6	3,500,000	200,000	1,811,000	100
23.	15	600,000	2,600	120,177	100
24.	24	150,000	900	19,022	90
25.	20½	1,000,000	160	99,975	100
26.	23½	200,000	10	15,558	57
27.	31½	14,000	10	2,216	37
28.	32	2,500	15	314	9
29.	36	12,000	5	1,172	14
30.	40	2,300	6	256	16
31.	27	900,000	1,000	86,480	100
32.	25	90,000	140	24,322	82

TABLE No. 28—Continued.

Sampling Point.	Depth of Water in Feet.	Bacteria.			B. Coli Present During Test, Per Cent. of Days.
		Maximum.	Minimum.	Average.	
23.	20	109,000	240	30,385	82
24.	16	100,000	200	19,228	75
25.	27	35,000	430	2,076	57
26.	30	120,000	650	27,471	92
27.	29½	100,000	60	27,506	60
28.	35	80,000	20	21,751	33
29.	39½	60,000	30	15,753	25
40.	45	22,000	3	3,541	0
41.	44	1,550	8	203	0
42.	33	2,800	50	945	36
43.	30	33,000	100	9,667	30
44.	32	2,000	40	584	57
45.	8	60,000	200	9,860	60
46.	26	18,000	80	3,560	50
47.	33	13,000	20	1,743	40

TABLE No. 32.—LAKE COUNTY, IND.

TYPHOID DEATHS IN THE CITY OF EAST CHICAGO FROM 1903 TO 1908.

Months.	1903.	1904.	1905.	1906.	1907.
January.....	0	0	0	1	0
February.....	0	1	0	0	1
March.....	0	0	0	0	1
April.....	0	0	0	0	0
May.....	0	0	0	0	2
June.....	0	0	0	0	1
July.....	0	0	0	0	0
August.....	0	0	0	0	1
September.....	0	0	0	0	1
October.....	0	0	0	0	1
November.....	0	2	0	0	1
December.....	0	0	1	0	3
Total.....	0	3	1	1	12
Rate per 100,000.....	0	55	13	13	160

Report of Sanitary Studies and Inspections.

THE BACTERIAL CONDITION OF PROTECTED AND UNPROTECTED FOODS AT RESTAURANTS, MEAT MARKETS, GROCERY STORES, BAKESHOPS AND FRUIT STORES.

The condition of the kitchen and dining room of a tidy housewife, when contrasted with similar rooms at restaurants and hotels, shows a marked difference in cleanliness of operation in favor of the housewife. It is evidently a fact that consumers of food expect far more care to be given food in their homes than in restaurants where they occasionally eat, or in the bakeshop or grocery that supplies their pantry.

The chief reason why home-cooked food is clean is that care is taken to protect it from dust, dirt and flies. The same care can and should be observed by the baker, grocer and hotel steward.

In order to determine the increased cleanliness of protected foodstuffs, during the month of February, 1908, several places in Indianapolis where food is sold were visited and sterile culture plates containing litmus lactose agar were exposed for different lengths of time on counters where uncovered food was displayed, and also where the food was kept under glass cases. The plates were then incubated for twenty-four hours at a temperature of 38° C., after which time colony counts and the number of acid-forming bacteria were noted. The following figures show clearly the increased cleanliness resulting from the use of glass cases for the protection of prepared foods.

The first experiment was carried on at Hopkins' restaurant. Culture plates were exposed on the pie-rack, located in the back of the restaurant and not subject to the street dust, for one minute, five minutes and twenty-five minutes. At the same time plates were exposed in the cases of the show-windows, that are subject to all the street dirt which blows through open doors on windy days. The plate exposed for one minute on the pie-rack showed 18 bacteria, with one acid former, while the plate exposed for one minute under the case showed but three bacteria and no acid formers. The plate exposed for five minutes on the pie-rack showed 63 bacteria, with three acid formers, while the one under the case had but ten bacteria, with no acid formers. The plate that was exposed twenty-five minutes on the pie-rack had 750 bacteria, with 38 acid formers, while the one exposed under the case for twenty-five minutes had but twenty-three bacteria, with one acid former. These figures show that in twenty-five minutes thirty-two times as many

bacteria had collected on the pie-rack that was subject only to the dust raised by walking about in the restaurant as on the plate which was protected by glass cases by the side of open doors.

The next experiment was made at Stegemeier's restaurant. Plates which were exposed for ten minutes gave a count of 131 bacteria, with one acid former. A plate exposed under a glass case containing cake collected 20 bacteria and no acid formers.

The dairy lunch room at 32 East Washington street was visited. The building is of tile and was very neat and clean in appearance. The street door was closed, and undoubtedly for these reasons the bacterial counts on the plates where goods were not covered were found low. The plates were exposed for ten minutes. The one where goods were not covered showed 30 bacteria and six acid formers, while the one exposed under the glass case had 18 bacteria, with no acid formers.

On the same day a very interesting condition was noticed in two stores, both of which made a business of vending candy on the street. One store at 7 South Illinois street was owned by Edward Lemon and the other at 5 South Illinois street by Komstohk & Co. The sales window of Mr. Lemon was carefully encased on all sides with a small trap window through which the candy and popcorn was sold. The window at Mr. Komstohk's was in glass cases, but contained an immense opening nearly the whole size of the sales window, through which the street dust was continually blowing over the goods on sale. A plate exposed in Mr. Lemon's window for ten minutes showed but 35 bacteria, with but six acid formers, while a plate exposed in Komstohk's window at the same time and for the same length of time collected 1,650 bacteria, with 600 acid formers.

An Italian selling candy from a cased cart at the corner of South Capitol avenue and Washington street was also visited and plates exposed, both on top and underneath the glass cases, for ten minutes. In that time the plate on top of the cases had collected 1,850 bacteria, with 800 acid formers, while the one under the cases had collected only four bacteria, with no acid formers.

In the grocery store of C. H. Rinne, 334 West Washington street, plates were exposed for ten minutes on the counter where cheese was sold uncovered, and also in protecting cases where cake was kept. The plate on the counter showed 1,100 bacteria, with 95 acid formers, while the plate exposed under the case had but 16 bacteria, with no acid formers.

At the meat market of Patrick Martin, 457 West Washington street, plates exposed for ten minutes on the meat counter col-

lected 225 bacteria and 70 acid formers, while a plate under a case gave in the same time but five bacteria and no acid formers.

Taggart's bakery on Massachusetts avenue was also visited. A plate exposed on the open counter for ten minutes gave 800 bacteria, with 50 acid formers, while a plate under showcases exposed for the same length of time gave but 15 bacteria, with one acid former.

On the same date Winterrowd's candy store on Massachusetts avenue was visited. This store had a very clean and neat appearance, a condition which was also shown by the low bacterial counts. A plate exposed on top of the candy case collected but 44 bacteria, with three acid formers, in ten minutes, while the plate under the case gave 19 bacteria and one acid former.

The Cafeteria lunch room restaurant was visited and a plate exposed on a table from which food is served. In ten minutes 260 bacteria, with 40 acid formers, were collected, while a plate under the case had but 34 bacteria, with one acid former.

On the same day a fruit store at the corner of Senate avenue and Vermont street was visited and a plate was exposed on the sidewalk fruit stands. In ten minutes 10,000 bacteria, with 650 acid formers, were collected, while a plate exposed on goods that were under glass cases collected in the same time 41 bacteria, with no acid formers.

The results of this short study of the bacterial flora of food products are so conclusive that they admit of no dispute and can arouse no contention. Foods kept under glass cases were in every case in an atmosphere practically free from dust and accompanying bacteria, while food on exposed tables and racks was surrounded by air heavily laden with dirt and bacterial life. It is also clearly shown that to a certain extent absolute cleanliness of floors and utensils keeps down the number of bacteria, and that on the contrary counters and stands near the sidewalks are always surrounded with atmospheric dust and dirt.

The number of bacteria collected in ten minutes on the sidewalk by a fruit stand or at the street corner near a candy vendor's push cart is so great that the absolute necessity of forbidding the sale of food so displayed is at once realized.

The types of bacteria collected on the culture plates during the investigation were not thoroughly differentiated. But there can be no doubt that they were varied and included both harmless and injurious forms, originating in the manure of the streets, the spittle from diseased lungs and nasal passages, and in every other form of the waste products of men and animals.

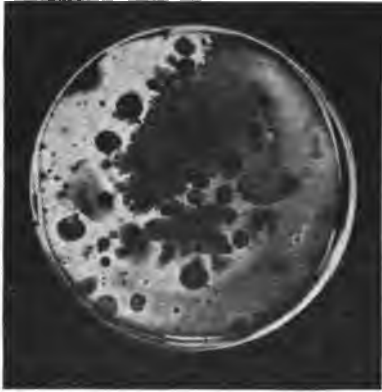


THE UNPROTECTED PUSH CART OF A CANDY VENDOR, SHOWING CONDITIONS PERMITTING GROSS CONTAMINATION.
(See Plate I.)



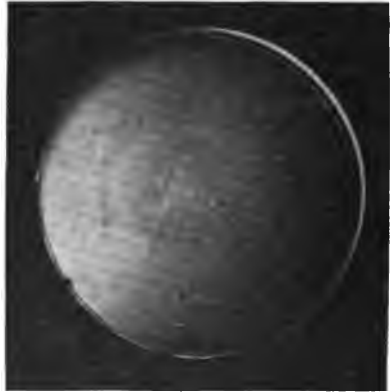
THE PUSH CART OF A CANDY VENDOR, SHOWING SANITARY CONDITIONS PRODUCED BY COVERING STOCK WITH A GLASS SHOWCASE. (See Plate II.)

I.



Unprotected Plate.

II.



Protected Plate.

PLATES EXPOSED AT A CANDY STAND ON THE STREET CORNER.

III.



Unprotected Plate.

IV.



Protected Plate.

PLATES EXPOSED AT PROTECTED AND UNPROTECTED WINDOWS OF A CANDY VENDOR.

V.



Unprotected Plate.

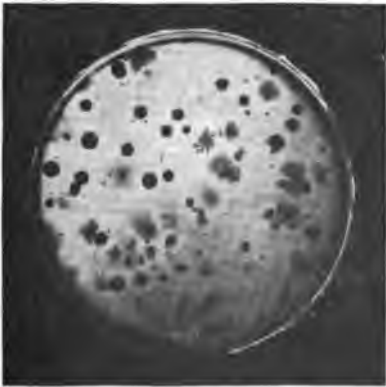
VI.



Protected Plate.

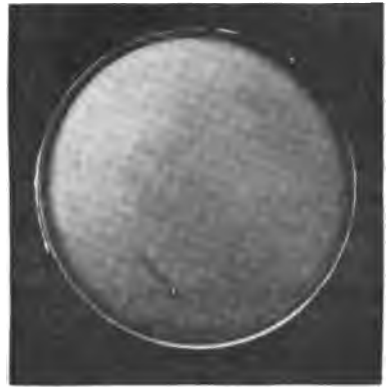
PLATES EXPOSED AT A FRUIT STAND.

VII.



Unprotected Plate.

VIII.



Protected Plate.

PLATES EXPOSED AT THE CHEESE COUNTER OF A GROCERY STORE.

REVIEW OF THE CANNING INDUSTRY IN INDIANA.

Indiana is rapidly becoming a vegetable and fruit packing State of first importance. It possesses the requisite conditions of soil and climate for the growth of the best varieties of field and garden products, and its one hundred and thirty or more canning factories attest to the commercial importance to which this business has grown.

Tomatoes, corn, peas, beans and pumpkins are the principal crops taken care of, although other products are utilized. Some of these factories produce baked beans of delightful piquancy, some produce large quantities of sauer kraut, many of them manufacture tomato catsup, while a number of them during the "off season" are given over to the production of bouillon, soups, hominy and canned meat products.

It is estimated that there is invested in the canning business in Indiana more than \$3,230,000. The total acreage of all crops during the year 1908 was 75,219, of which tomatoes alone constituted 22,673. The total amount paid for tomatoes the present year was \$573,536, and the value of the finished tomato product alone was more than \$2,500,000.

Another thing worthy of attention is the fact that only a few of these plants are under outside control. More than 95 per cent are owned locally, and many of them are operated by comparatively small stock companies controlled in large part by the farmers who raise the crop.

In 1901 the state legislature of Indiana passed a law making it necessary to keep all places where food products are manufactured "in a clean, healthful and sanitary condition." This law has been supplemented by rulings of the State Board of Health made under statute authority, and with the passage of the federal Food and Drugs Act of June 30, 1906, and the state law of March 4, 1907, a definite basis has been laid for a careful supervision of all such plants in the State. The scheme of sanitary control adopted in accordance with the aforesaid laws and rulings by the State Board of Health to govern the inspection of canning factories and the products therefrom is as follows:

1. Kind of building.
2. Condition of floors.
3. Condition of building.
4. Disposal of sewage.
5. Condition of toilets.
6. Are wash-room facilities provided?
7. Are work-rooms sufficiently screened?
8. -Are employes healthy?
9. Are they cleanly in appearance and dress?
10. Are preservatives used in tomato pack?
11. Is tomato pulp put down in barrels?
12. How much benzoate is used per barrel?
13. Is pulp made from the whole sound fruit or from rotten refuse?
14. Is factory well organized and apparently successfully operated?
15. Is it an independent factory or branch?
16. Remarks:

During the last year practically every factory in the State was inspected and graded according to the above plan. Many were visited more than once, and where delinquencies were discovered formal notices were given to correct these conditions within stated times. It is encouraging to note that our effort to co-operate with the managers and owners of factories met with uniformly cordial response, so much so that before the present season closed sanitary conditions about most of the factories were materially better than at the beginning.

On account of the dry weather prevailing during practically the whole of the growing season the crop this year was cut down at least 20 per cent of the normal yields and the quality of the product was greatly reduced. Dry rot prevailed generally, the crop ripened unevenly, and there was a large amount of sun-scorched and green-cored fruit brought to market. This necessitated the installation of sorting belts or tables at a large number of the plants, and the loss to the packers in discarded bad fruit was considerable. Be it said to the credit of the packers, however, that they willingly met this loss and incurred the increased cost of handling the product in order that their goods might be made to conform with the section of the law—state and national—which prohibits the use of any rotten or decomposed substance in a food product. During the present season many thousands of gallons

of tomato catsup were thrown away at our suggestion, and on the whole, even with an inferior crop, the pack this year is of much higher quality than has ever been obtained before.

The agitation relative to the use of benzoate of soda as a preservative seems largely to have settled itself. None has been used this year in the tomato pack, and a large number of packers have abandoned its use in tomato catsup. The result is that they are putting up a superior, better flavored article, and one that keeps perfectly well. It is now generally accepted that the only need of a food preservative is to make possible the use of inferior or rotten stock or to cover up some defect in the manufacture, and it is for this reason, as much as for any other, that objection is made to its use. Our packers are now employing better methods and using better stock, hence they find little or no excuse for preservatives and have abandoned them. Such business precedence seems to have been given the nonpreservative goods that there is little probability of any trouble occurring with our packers next year when the law prohibiting the use of benzoate of soda as a preservative goes into effect. It will be remembered that by mutual agreement the use of not more than one-tenth of one per cent of sodium benzoate in tomato catsup and sweet pickles sold in bulk was allowed during the season of 1908, but for that season only. The desire of the packers to co-operate with the authorities has been one of the encouraging features all along, and we doubt not that next year it will be difficult to find a manufacturer in this State operating his business in violation of this section of the law.

Last year every canner in the State was sent the following notice to serve as a guide in the conduct of his business:

JULY 1, 1907.

NOTICE TO CANNERS AND PACKERS.

The new food and drug law of the State of Indiana follows closely the lines of the Federal law, and in its enforcement the same rules and regulations will be observed that have been made by the Department of Agriculture.

The use of saccharine, dulcin, sucrol, grantose, Heyden-sugar crystals, glucin or any other coal-tar sweeteners is prohibited.

The use of sulfurous acid or any of its salts, either as a bleach or preservative, is prohibited.

The use of any antiseptic or preservative substance, except salt, salt-peter, sucrose, vinegar and spices, is prohibited, except that not to exceed one-tenth of one per cent of benzoate of soda may, for the present season, be used in tomato catsup or sweet pickles sold in bulk.

The use of starch or other filler is prohibited.

The use of artificial coloring or bleach is prohibited.

No filthy, decomposed, or rotten vegetable substance shall be used in the manufacture of tomato catsup or any other product.

Factories shall be well lighted and ventilated, provided with water-closets separate from rooms in which food is prepared, and with suitable washing facilities.

Floors shall be made of cement or solid plank, so laid that they may be flushed with water at the end of each day.

False or loose floors shall not be allowed unless laid over cement.

No water or waste material shall be allowed to accumulate under or about any factory and all by-products subject to fermentation shall be removed from the factory and surroundings without unnecessary delay.

The employment of persons suffering from cancer, tuberculosis, syphilis, or any contagious or infectious disease, or whose hands have sores on them, is prohibited.

Proprietors of canneries and packing houses shall prohibit spitting upon the floors, and shall require employes to wash their hands after going to the closets and before returning to work. Notices shall be posted in all canneries and packing houses to the above effect.

This year the same notice was sent out again, and there seems no reason why, with these instructions and the very thorough inspection given to business by this department, every canner, large and small, should not have a clean, decent factory and be putting out a high-grade product. Next year the inspection will be continued, and if the factory is found in bad condition it is proposed to enforce the law relating thereto. This will necessitate installation of wash-room facilities in every factory, the keeping of clean toilet rooms, proper disposal of sewage, water-tight floors and the cleaning up and disinfection of many plants and premises, and it will require also the sorting out during the packing season of all bad fruit. Statistics have been collected with reference to this last point the present year, and it is found to be the unanimous opinion among high-grade packers that the only way to secure a clean, sanitary pack or catsup stock is to separate all rotten fruit before it is treated with steam or hot water. It is held that if the rotten or decomposed product is put into the vat to be scalded with the other fruit the two will become so intimately mixed as to make complete separation impossible. The result is a product unsalable under the present law.

This office has on file letters signed by a large number of the leading packers of the State to the effect that they do not believe it to be practicable or economical to leave the sorting of tomatoes to the peelers; but on the contrary they declare that in their judg-

ment the only way to produce a uniform legal pack is to separate the rotten inferior product from the good and allow the latter only to go to the peeling tables. They furthermore announce it as their purpose to follow this method in their business, and an inspection of their plants from time to time shows that with few exceptions they are doing it.

This year there was promulgated by the State Board of Health a ruling prohibiting the use of galvanized iron pails in which to place acid fruits. The order was based upon experiments which showed that the acid of the fruit combines with the galvanized coating of the containers, producing a poisonous zinc salt. Inspectors have reported a number of instances where the lining in pails used at canning factories has been completely destroyed by the acid in the fruit. In these days of sanitary cans and gold enamel containers sealed "without acid solder" the use of galvanized metal receptacles at the canning factory is entirely out of keeping with the spirit of the times. Next year we shall expect to find their use wholly discarded and in their place wood or fibre pails or porcelain lined receptacles.

The laws of Indiana make illegal the employment about a food factory of any person afflicted with tuberculosis or any form of communicable disease whatsoever, and this feature of the statutes is being rigidly enforced. Recently an inspector caused the discharge of a person disfigured with cancer of the face. Managers of canning factories should be very careful to refuse work to any one suspected of being so afflicted as to make their employment illegal. It should be said, however, that owing to the fact that so large a number of the factories are located in rural districts, and on account of the vigilance of managers of factories generally the health of employes about the canneries of the State is unusually high.

Here follows a detailed report of the inspections of 124 of the operating canning factories in Indiana for the year 1908:

AUSTIN—

Austin Canning Company: The building is of frame, in good condition, and the floors are in good repair. The refuse is sewered out of the building and hauled away. The employes are neat in their appearance and are cleanly dressed. No preservatives are used in the pack but salt; from five to fifteen pounds per barrel is used in the tomato catsup stock, and this pulp is made from whole stuff and the refuse from the skinning table.

The Star Canning Company: The building is of frame, and its condition satisfactory. The floors are passable and the washings are sewered

out into an open well and from there it is hauled away in wagons. Employees are neat and cleanly. No preservative is used in the tomato pack, but eight ounces of benzoate of soda is used to the barrel of pulp, and this is the product of whole fruit and the discarded parts from the peeling tables.

ARCADIA—

Arcadia Canning Factory: The building is of frame, and in good condition with the exception of the floors, which are constructed of loose boards. The condition about the toilet rooms is only fair, and there are no washroom facilities provided. No preservatives are used, but the tomato catsup pulp is the refuse from the peeling tables. Notice was given to provide new floors and screen building.

ADVANCE—

Advance Canning Company: The factory building is old and dilapidated; the floors are in fair condition, but there is no adequate sewage system. Toilet conditions are wholly unsatisfactory and there are no washroom arrangements provided. No preservative is used in the pack, but the pulp is made from refuse stock. Ten barrels of tomato catsup pulp was taken off the market at our suggestion, for the reason that it had been made in part from decomposed product. Notice given to install sorting apparatus at once, repair the factory and dispose of refuse.

ANDERSON—

Anderson Canning Company: The building is in good condition, and the floors and drain are both satisfactory. The pulp is made from table stuff and whole fruit. There are no washroom facilities and galvanized iron buckets were used for the reception of peeled fruit. Ordered, that screens be put up and washroom arrangements be provided and wooden or fibre buckets be used, instead of the zinc.

AMBOY—

Amboy Canning Company: The building is of frame and in only fair condition. Floors are poor, and on account of their open condition the sewage is allowed to run under the building. Whatever part of the refuse is gathered up is dumped into a nearby creek. The toilet conditions are not satisfactory, and the building is located 300 feet from a cemetery. The tomato pulp is discarded.

AURORA—

H. D. Tufts: The building is of frame. The conditions are fair. The floors are partially satisfactory, and the water and refuse are gathered up by hand and dumped into a sewer. The toilet conditions are good and the pulp is discarded.

BIRDSEYE—

Birdseye Canning Company: The building is of frame, and in fair condition. Floors are double and the sewage is hauled away. Toilets are poor. Pulp is made from skinning-table refuse, and eight ounces of benzoate is used per barrel. The employees are neat and cleanly.

BROOKSTON—

French Bros.: The building is of frame and in poor condition. Floors are, likewise, in an unsatisfactory condition. Toilets are unsanitary and there are no washroom facilities provided. General premises, with these exceptions, are fairly satisfactory. This company has been using flour filler in the corn pack. Notice given to clean closets and lime, fix floors and provide wash-rooms. Pack this year was from 40 to 50 per cent short. One inspection during the season.

BROWNSBURG—

Ladoga Canning Company: Building poor; bad floors; no adequate disposal of sewage; pulp discarded. On first inspection this factory was not sorting its product, but commenced at once and continued throughout the season. Pack this year was 50 per cent short. Notice given to completely overhaul building and premises before another year. Two inspections for the season.

BUNKER HILL—

F. C. Wagler: Building frame, in fair condition. Floors are bad, full of cracks, and the slops are going through and fermenting under the building. A sewer drain from under the building down to the interurban tracks. No benzoate is used in the pack, and the pulp is discarded.

CROTHERSVILLE—

Crothersville Fruit Canning Company: The building is in good condition and the floors are fairly satisfactory. The sewage is disposed of by hand and by an open ditch. Toilet room conditions are not satisfactory. The pulp is made from the whole fruit, and refuse and is preserved with salt, five pounds to the barrel.

CORYDON—

Corydon Canning Company: The building is of frame, in good condition, and the floors are good. The sewage is hauled away. Toilet conditions are fairly satisfactory, but there are no wash-room facilities provided. Tomato pulp is made from the whole fruit and from refuse, and five pounds of salt per barrel is used as a preservative.

CHARLESTOWN—

Charlestown Canning Company: The building is of frame, in good condition, and the floors are also satisfactory. The refuse is hauled or carted away, and the toilet rooms are satisfactory. Employees are clean, and suitably dressed. No preservative is used in the pack, and the pulp is thrown away.

CHRISTNEY—

Christney Canning Company: The building is of frame, in poor condition, and the floors are in bad condition. The sewage is disposed of by open drain and hauled away. The toilet rooms are in fair condition and the employees are clean. No preservative is used. Pulp is thrown away. This factory needs a thorough renovation, concrete floors, and a general cleaning up, and orders were given to that effect.

COLUMBUS—

Columbus Canning Company: Building is of brick, in fair condition, and the floors are passable. Refuse is sewerred and hauled away. Toilets are fair and the employes are presentable. Pulp is made from whole produce, and refuse and four ounces of benzoate of soda is used per barrel.

CAMPBELLSBURG—

Campbellsburg Canning Factory: Building is of frame; general conditions are fair; floors are good. Sewage is disposed of by drain and by hauling away. Toilet conditions are not satisfactory. No tomato pulp is put up.

CADIZ—

Cadiz Canning Factory: Out of business.

CARMACK—

Carmack Canning Company; B. & H. Dragoo Company: The frame building is in bad condition and the floors are unsatisfactory. No arrangement is made for the disposal of sewage, and no wash-room facilities or screens are provided. Catsup is made from the whole product, and no benzoate of soda is used. Notice given to provide new floors in the process room, cell overhead and provide wash-room arrangement.

CAMBRIDGE CITY—

L. T. Whitely & Son: Building good; floors in fair condition. The arrangements for sewage are a drain under the building. Toilets in fair condition. No preservatives used in the pack; pulp put down in barrels.

CLINTON—

Clinton Packing Company: Frame building, is in good condition. Sewage run out into a well and hauled away. Fair condition of toilets, but no wash-room facilities. No preservatives are used in the pack and the pulp is discarded. Notice given to install sorting apparatus, clean up, and remove accumulated waste at once. One inspection for season.

COVINGTON—

Covington Canning Company: Building is of frame, and in good condition. Good sewer, but there are no wash-room facilities provided. No preservatives are used in the pack, but the pulp was made without adequate sorting. Pack is short 40 per cent or more this year. Notice given to clean up and arrange to sort out all bad stuff at once. One inspection for the year.

CAYUGA—

Cayuga Packing and Manufacturing Company: Building is of brick, but there is no adequate sewage system provided. Toilet conditions are wholly unsatisfactory, and no wash-room arrangements are made for the employes. No preservatives are used in the tomato pack, but 1½ ounces of preparation No. 39 of the T. A. Snyder & Co., Cincinnati, used to the barrel of pulp. Notice given to fix floors, provide adequate sewage arrangements, lime, wash and clean up at once. Pack this year is short.

CROTHERSVILLE—

Farmer's Canning Company: Frame building is in good condition, and the floors are satisfactory. The waste is taken care of by a sewer and by hand. Toilet conditions are fair, only there are no screens. Pulp is made from the whole product, and refuse from table, and five pounds of salt are used per barrel as a preservative.

CLARKS HILL—

Harmon Bradshaw Company: This company provides a good building, with cement floors and a good sewage system. On first inspection it was found that the pulp was being made from waste material, and 250 gallons were condemned. Immediately sorting apparatus was installed and all fruit was thoroughly sorted before going into the scalding. Employees are neat and apparently healthy, but there are only fair toilet conditions. On second inspection this was found to be one of the cleanest all-around factories in the State. The pack this year was at least 40 per cent short. There were two inspections for the season.

CLAY CITY—

Clay City Packing Company: The building occupied by this company is old and dilapidated, and needs thorough renovation. The sewage system is inadequate. The premises are grown up in weeds, covered with rubbish and accumulated dirt, some of which was canning factory waste. No preservatives are used, but on first inspection it was found that catsup pulp was being made from canning factory refuse. Notice was given to clean up and renovate the building at once. This was complied with and conditions improved very materially. A large amount of tomato pulp was condemned. This company needs a new building, a good sewage system and a clean site. The crop this year was at least 50 per cent short. Five inspections were made during the season.

CARTHAGE—

Carthage Canning Company: Building is frame, and in fairly good condition, except for the floors, which are bad. The sewer drain takes care of the refuse, and at the time of inspection the toilets were satisfactory. Wash-room facilities are provided and the pulp is put down in barrels, six ounces of benzoate being used as a preservative. Ordered new floors in the peeling-room and a drain under the pack machine.

DUFF—

Duff Canning Company: Building occupied is of frame, in fair condition, and the floors are fair. The sewage arrangements are unsatisfactory, being open ditches. Toilet conditions are fair. No preservative is used in the pack, but the preparation No. 30 is used in the tomato catsup pulp, which is made from whole stock and refuse from the peeling table. Ordered to provide better drainage system.

DUBOIS—

Dubois Canning Company: The building is a good frame structure, and the floors are satisfactory. The sewage is taken care of by a sewer and by hand. Toilet conditions are fair. No preservatives are used and the tomato pulp is discarded. Ordered to improve the drainage system.

DEPUTY—

Deputy Canning Company: The frame building, as to general conditions and floors, is fair. Refuse is disposed of by sewer and by hand. The toilet conditions are entirely satisfactory. The pack is without preservatives, filler or bleach, but the tomato pulp is objectionable, being made in part from refuse. Ten pounds of salt is used to the barrel.

DELPHI—

Great Western Canning Company: The cement building is objectionable because it is not sufficiently lighted, but the building is clean, the floors are of cement and the sewage system is perfectly satisfactory. Wash-room facilities are provided for the employes, and the toilet conditions are good. The general score of this factory is high, but more windows should be provided. No tomatoes are put up at this factory, and the rest of the pack is short several per cent.

DUNREITH—

The E. C. Deem Manufacturing Company: Frame building is in good condition, and the drainage is satisfactory. A somewhat unusual thing about this factory is that proper wash-room facilities are provided. No preservatives are used, but five pounds of salt per barrel was put in the tomato catsup pulp. Galvanized metal buckets were being used, and notice was given to discard them.

DALEVILLE—

J. G. Sutton Canning Company: Frame building is in fair condition. The floors are wood. The sewage and waste is drained out into a basin and hauled away. Toilet conditions at the time of inspection were satisfactory, but there were no wash-rooms or screens. Notice given to provide new floors, construct a board partition between the factory and boiler room and install a proper drainage system.

ENGLISH—

English Canning Company: The building is a frame structure, in good condition, and the floors are good. A proper sewage system is provided, an objection being that the toilet conditions are only fair. The tomato pulp is made from refuse from the skinning tables, and nine ounces of benzoate is used to the barrel.

EVANSVILLE—

Indiana Canning Company: The frame building is satisfactory, and the floors are good. There is a sewage system, which is supplemented by taking care of some of the refuse by hand. Toilet conditions are good. Employes are clean and apparently healthy. The tomato pulp is made from whole and refuse stock, and eight ounces of benzoate is used to the barrel.

EDINBURG—

Naomi Canning Company: The factory is of concrete blocks, and is in good condition. The floors are good, the refuse is taken care of by sewer and by hand; toilet conditions are good. Employes are neat and apparently healthy, and the tomato catsup is made from whole fruit and the refuse from the tables. Five ounces of salt is used to the barrel.

ELNORA—

Elnora Canning Company: The building is comparatively new and in good condition. On first visit, little or no sorting was attempted and there was a good deal of refuse about the factory. No preservatives were used and the barreled pulp was preserved with preparation No. 30. Later in the season this was discarded and salt was used. The second inspection showed all product being sorted before going to the scalding. The company requires the producer to stand the loss for bad material brought in, and this year put up twenty-five hundred more cases of tomatoes than ever before. The factory is still objectionable because of unsatisfactory closet conditions and refuse in and about the factory. Notice has been given to remedy these conditions.

EATON—

P. D. Peck Manufacturing Company: Building is frame, and in fair condition. The floors and the drain are likewise fairly satisfactory. No preservatives are used in the pack, and the pulp is made from all kinds of refuse. Orders given to provide screens, wash-rooms, signs for toilets, and noncorrosive containers for the acid fruits.

ELWOOD—

Frazier Packing Company: Building is frame, and the wood floors are fair. The drain under the building is not wholly satisfactory, and the wash-room arrangements are not adequate. One-tenth of one per cent of benzoate of soda is used in tomato catsup pulp. Ordered screens in ten days.

FRANKLIN—

Franklin Canning Company: The building is frame, and in good condition. The floors are poor, but there is cement below the planks. Wash waters are taken care of by sewer and by hand. The toilet conditions are fair. Employees are neat and apparently healthy. The company does not pack tomatoes.

FLORA—

Flora Canning Factory: Building is in good condition. No preservatives are used in tomato pack, but seven ounces of benzoate is used in the tomato pulp, which is made from the waste. Nine hundred thirty-five gallons of the catsup stock was taken off the market. Toilet conditions are fair, and general sanitary conditions are satisfactory, but no attempt was made to sort out the rotten stock before scalding. Orders were given to install sorting machines at once, and the order was complied with.

FLAT ROCK—

Flat Rock Canning Company: Out of business.

GREENWOOD—

J. T. Polk & Co.: The building is of brick, and the general conditions, including the floors, are excellent. There is a good sewage system, and the toilets are satisfactory. The employees are neatly dressed, in certain departments in white duck uniforms, and they are apparently healthy. No preservatives are used and the only criticism upon this factory is that the tomato pulp is made from whole fruit and refuse from the peeling tables.

GASTON—

The Gaston Canning Company: The company occupies a fair frame building, with wood floors and a fair drain. Basins are provided for the employes to wash their hands in. The tomato pulp is made from skinning-table refuse, and eight ounces of benzoate to the barrel is used as a preservative.

GREENSBURG—

Hamilton Bros., Canning Company: Out of business.

GREENSBORO—

The Duck Creek Canning Company: The frame building is fairly satisfactory, except for the floors. There is a bad ditch under the building. Toilets are only fair, with no wash-rooms nor screens. Orders given to provide wash-room facilities, properly screen the building and put in an adequate drainage system.

GREENSFORK—

Greensfork Canning Company: The condition of the frame building and floors is only fair. There is a very unsatisfactory method for the disposal of the sewage, and no wash-room facilities are provided. The tomato pulp is discarded. Not a sufficient crop produced this year to warrant a continuous run.

HUNTINGBURG—

Huntingburg Canning Company: The frame building is in good condition and the floors are satisfactory. The waste products are disposed of by sewer and by hand. Toilets are in fair condition and the employes are cleanly dressed and apparently healthy. Preparation No. 30 is used in the tomato catsup pulp, which is made from whole and refuse stock. This is a new building, built down in a basin, and the drainage is consequently poor.

HENRYVILLE—

Jeffersonville Canning Company: The frame building is in good condition. The refuse is sewered out and hauled away. Toilet conditions are fair. Employes are neat and apparently healthy. The pulp is made from whole stock, and refuse is discarded by the peelers. Seven pounds of salt is used to the barrel. General improvement is recommended here.

HOPE—

The Hope Canning Company: Building is brick and frame, and conditions satisfactory. Waste material is sewered out and hauled away, and the toilets are fair. Employes are neat and apparently healthy. Tomato pulp is made from whole and refuse stock not suitable for canning, and four ounces of benzoate of soda is used to the barrel.

HOMER—

The Homer Canning Company: Out of business.

INDIANAPOLIS—

Columbia Conserve Company: The factory is brick and in good condition. The floors are satisfactory and the sewage system is good. Wash-room facilities are provided. The pulp is made from whole fruit and decomposed refuse from the peeling tables. No preservatives in pulp or pack.

The Van Camp Packing Company: The building is frame and brick, and is in a satisfactory condition. Sewage system is also good. The employees are neat and apparently healthy, and the tomato pulp is made from whole fruit and refuse. One-tenth of one per cent of benzoate of soda is used in the pulp.

W. D. Huffman Co.: Building is of frame and in bad condition. The floors are bad and the sewage system is inadequate. Toilets are only fair and there are no wash-room facilities. Tomato catsup pulp is made from refuse and one-tenth of one per cent of sodium benzoate is used. This factory needs new floors and a general cleaning up. The inspector who investigated it reports it very dirty.

Van Camp Packing Co. (second inspection): Frame and brick building, in good condition. Floors are wood and there is a good drainage system. Pulp is made from refuse from tables and one-tenth of one per cent of sodium benzoate is used. This inspection disclosed the fact that galvanized iron pails were being used by the peelers, and these containers were very much acid eaten. Ordered pails changed.

Schnull & Company: The building is a frame structure and is satisfactory. There are cement floors and good drainage. Toilet conditions, however, are only fair. Tomato pulp is made from refuse, including decayed tomatoes, and one-tenth of one per cent of sodium benzoate is used as a preservative.

Haglescamp Bros. & Haverscamp: Building is of frame, and bad conditions prevail throughout. Floors are bad. The sewers would be good except for the bad floors. Pulp is made from refuse, including decayed stuff, and five ounces of sodium benzoate is used per barrel. Orders given to put in new floor.

JEFFERSONVILLE—

Jeffersonville Canning Company: The building is of frame and the general conditions are good, including good floors and good sewage system. Employees are neat and apparently healthy. This factory is not running on tomatoes.

JASPER—

Jasper Canning Company: This company occupies a new frame building. The floors are good, sewage is properly taken care of, and the toilet conditions are satisfactory. The employees are neat and apparently healthy. Preparation No. 30 is used in the catsup pulp, which is made from whole fruit and refuse from the tables. This factory is one of the best small plants in the State, the only objection being in the character of the tomato pulp.

JAMESTOWN—

Jamestown Canning Company: Two inspections were made of this plant during the season. The building is new and general conditions were satisfactory, except for inadequate toilet arrangements and the fact that there was no attempt to sort out the bad product before passing it on to the peelers. On second inspection these conditions were not wholly corrected, and orders were left to complete toilets at once and install suitable sorting apparatus. This factory can be made wholly satisfactory with very little additional expense or work. The tomato pulp is discarded.

KEMPTON—

Kempton Canning Company: The building, of combined brick and frame, is satisfactory, except for bad floors. There is no suitable drainage system, and the toilets are only fair. Wash-room facilities also seem to have been forgotten by the managers, and the pulp is made from refuse from the skinning table. No preservatives are used in the pack and the tomatoes are not sorted. Ordered to sort tomatoes, put in drain, floor the peeling room, and give the whole premises a general cleaning up.

KENNARD—

The Kennard Canning Company: The frame building is in fair condition, as are also the floors and the drain under the building. Delinquencies were noted as to the manner of keeping the toilet rooms, and the wash-room proposition seems to have been wholly lost sight of. No preservative in the pack, but the pulp is made from skinning table stuff. Notice was given to clean up under building.

KNIGHTSTOWN—

Knightstown Canning Company: The frame building is in fair condition. The floors are passable. Drain is used for sewer, and the toilet rooms are not kept clean. Pulp is made from the refuse from the skinning table, and five ounces of benzoate is used to the barrel. Galvanized buckets are used in which to place the peeled fruit. Orders were given to discontinue the use of galvanized iron buckets and to put in new floors in the peeling room.

KOKOMO—

Kokomo Canning Company: Building is of frame, in fair condition. The floors are of wood and cement. The drainage system is fair. Toilet conditions are not satisfactory. The idea of a wash-room has not suggested itself sufficiently strong to the managers of this factory yet. The building needs to be sided up and screened.

Sailor's Packing and Canning Company: The building is of wood and brick, and is in fair condition. The floors are of cement, and the drainage seems to be at least partially satisfactory. Toilet conditions are not wholly desirable, and there are no separate wash-room facilities. Tomato pulp in this factory is made from refuse, and eight ounces of benzoate is used to the barrel to prevent further fermentation.

LOOGOOTE—

Loogootee Canning Company: The frame building is in good condition. The floors are good. Sewage system is satisfactory. Toilet conditions score fair. The employees are neat and apparently healthy, but the inspector noted that the tomato pulp was made from whole fruit and refuse, six pounds of salt being used to the barrel as a preservative.

LEXINGTON—

Lexington Canning Company: The frame building is in fair condition and the floors are partially satisfactory. The refuse is taken care of by a sewer and is hauled away. The common criticism of unsanitary conditions about toilet-rooms obtains here as elsewhere. The employees are neat

and apparently healthy. Wash-room facilities are neglected here, and the pulp is objectionable because it is made in part of refuse material. Six ounces of benzoate used to the barrel.

LITTLE YORK—

Little York Canning Company: Building is of frame and in good condition. Sewers are satisfactory, but the toilet rooms are not creditably kept. Employes are neat and presumably healthy. The tomato pulp is made from whole and refuse stuff, and six ounces of benzoate or seven pounds of salt is used per barrel to prevent further spoiling.

LADOGA—

Ladoga Canning Company: The frame building is old, but is fairly well kept. However, there is no adequate sewer system, and the present floors are not satisfactory. The toilet-rooms are not well kept, and there are no separate wash-room facilities. General sanitary conditions about the factory are poor, and catsup pulp is made from refuse, including decayed tomatoes. Notice given to clean up at once, fix the floors tight and take out the decomposing products before resuming operation. This factory needs a thorough overhauling to make it sanitary.

LEBANON—

American Canning Company: A good building of frame construction is occupied by this company. A sewage system sufficient to take care of the slops and washings is in operation. No preservative is used in the pack, but at the first of the season preparation No. 30 and, later on, salt was used in the tomato pulp to prevent fermentation. When the factory was first inspected it was discovered that there was no attempt to sort out the bad fruit, and consequently this product got into the catsup, and as a result several barrels of the catsup pulp were condemned. At our suggestion sorters were put on the product as it comes in, and were kept employed during the season in taking out the rotten and decomposed product before the fruit reached the peelers. The pack this year was 60 per cent short. The toilet conditions at this factory have never been wholly satisfactory, and notice has been given to make certain other improvements about the plant.

LAPEL—

Lapel Canning Company: The building occupied by this company is of frame, the floors are of cement, and general conditions are satisfactory. The toilet arrangements, however, are not all that could be desired and there are no screens to the factory. No preservatives are used in the pack, but five pounds of salt is used in every barrel of the tomato pulp, and this product is made from the table refuse. Galvanized buckets, more or less acid-eaten, are in use. Ordered, that buckets of some noncorrosive substance be used and the factory be screened.

LEWISVILLE—

Lewisville Canning Company: The frame building occupied is in fair condition, floors are tight wood, and a ditch under the building serves as a sewer. The toilet conditions are fair. No wash-room facilities are pro-

vided and no preservatives are used in the tomato pack. One and one-half ounces of benzoate to the barrel is used in the catsup pulp, composed in part of the refuse material from the peeling table. Orders given to put in new drain, to discontinue the use of galvanized iron pails, and to give the factory and the yard a thorough cleaning up.

LAGRANGE—

Franklin McVeigh & Co.: The building occupied by this company is in poor condition. The floors are made of plank and they are unsatisfactory. Part of the refuse seems to run through and is allowed to ferment under the factory; part of the sewage is hauled away. There are no wash-room facilities and the factory generally is in bad condition. One-twelfth of one per cent of benzoate is used in the pulp, which is made from the whole fruit.

MEMPHIS—

Memphis Canning Company: The frame building in use by this company is in fair condition only. The floors in some places are passable and in other places wholly unsatisfactory. The toilet conditions are fair and the employes are apparently healthy and cleanly dressed. The tomato pulp is prepared from the whole product and refuse from the tables, and eight ounces of benzoate of soda is used per barrel to prevent further fermentation. In general the place is unsatisfactory. Orders were given to repair floor and put in tilling.

MARENGO—

Marengo Canning Company: The building is of frame, and conditions are fair to poor. The floors are bad and were ordered repaired at once. The sewage is disposed of by hauling it away every other day. The toilet conditions are unsatisfactory. The tomato catsup pulp is made from refuse discarded by the peelers, and eight ounces of benzoate per barrel is used as a preservative.

MT. VERNON—

Posey County Canning Company: This concern went out of business three years ago and will not reorganize.

MADISON—

Madison Canning Company: The building is of frame, and the general conditions are satisfactory. A good sewage system is in operation and the toilet conditions are satisfactory. No wash-room facilities are provided, but the employes are neat and apparently healthy. Tomato pulp is here, as elsewhere, made from whole stock and refuse, and five pounds of salt is used to the barrel.

MARKLAND—

Markland Canning Company: A frame building is occupied by this concern, and the general conditions are only fair. Refuse is sewerred out and hauled away, and the toilet conditions are not satisfactory. No separate wash-room facilities are provided. The catsup stock is made from whole or refuse stuff, and five pounds of salt is used to the barrel.

PAXTON—

Paxton Canning Company: Factory abandoned.

PIERCETON—

Reid, Murdock & Co.: The building is of brick and frame and is satisfactory. The sewage is disposed of by hauling it away; the floors are rather poor and the toilets are unsatisfactory. One-twelfth of one per cent of benzoate of soda is used in chili sauce. None is used in catsup. Pulp is made from whole sound fruit. Screens and wash-room facilities were ordered.

PLYMOUTH—

Plymouth Manufacturing and Canning Company: The building here is of frame, and in only fair condition, and the floors are unsatisfactory. There is no sewage system, the slops being thrown outside of the building. Toilets are dilapidated and no wash-rooms are provided. Pulp is made from the whole fruit and the refuse. No preservatives are used. Ordered that the accumulation about the factory be removed, that the toilets be put in good condition, wash-room facilities installed and the building screened.

PERU—

Peru Canning Company: The frame building is in good condition; the floors are satisfactory and there is a suitable drain. Toilet conditions are satisfactory, but the pulp is made from refuse and no preservatives are used.

ROCKPORT—

Rockport Canning Company: Building burned before starting operations; will not rebuild.

RISING SUN—

Rising Sun Canning Company: The building is of frame, is in good condition and the floors are satisfactory. The refuse is sewerer out and hauled away, and the toilet conditions are good. Wash-room facilities are provided. Employees are clean and apparently healthy. The tomato pulp is made from whole stock and refuse, and benzoate of soda is used as a preservative.

SEYMOUR—

Seymour Canning Company: The building is a frame structure in good condition, with good floors. The refuse is sewerer out of the building and hauled away. Toilet room conditions are fair; wash-room facilities are provided, and employees are clean and apparently healthy. The catsup stock is made from whole fruit and stuff discarded by the peelers. Eight pounds of salt is used per barrel as a preservative.

SELLERSBURG—

Sellersburg Canning Company: The building is of frame, in poor condition, and the floors are bad. At the time of inspection this factory was not running.

SCOTTSBURG—

Leota Canning Company: The building is of frame, in fair condition, and the floors are reasonably satisfactory. The sewage is disposed of through an open ditch and is then hauled away. Wash-room facilities are provided. Employees are clean and apparently healthy. The catsup stock is made from whole tomatoes and refuse, and six pounds of salt is used to the barrel.

Ox Valley Canning Company: The frame building is unsatisfactory and the floors are only fair. An open ditch is used to get the sewage out from under the building, when it is hauled away. Toilet conditions are not all that could be desired. Wash-room facilities are provided. Employees are clean and apparently in good health. The catsup pulp is made from whole and refuse stock, and five pounds of salt is used per barrel in this tomato catsup product.

Scottsburg Canning Company (J. W. Rider): This building is of frame and its condition met the approval of the inspector. The accumulation is sewerred out of the building and hauled away. Toilet-room conditions are fair and the washing arrangements for the employees are satisfactory. Persons working in the factory are reasonably clean and seem to be in good health. Whole fruit and refuse are the stock out of which the catsup is made, and eight pounds of salt is used per barrel.

SALEM—

The Canton Canning Company: The frame building occupied by this company is in fair condition, but the floors are not up to requirements. The sewage is hauled away and toilet-room conditions are not satisfactory. It appears that there are wash-room arrangements provided, and the persons working about the factory are clean and apparently in good health. The catsup stock is made from refuse from the skinning table, and eight ounces of benzoate is used per barrel.

SWITZ CITY—

Switz City Canning Company: The building is of frame, old, no sewers, and the premises are overgrown with weeds. Not running this season. Two inspections made.

SHARPSVILLE—

Sharpsville Canning Company: The building is constructed of brick and wood, and its condition is fair. The floors, however, are of loose boards, and were wholly unsatisfactory. There is a fair sewage system, but no wash-room facilities are provided. The catsup stock is made from refuse. Ordered, new floors, screens and a better sewage system.

SPICELAND—

Spiceland Canning Company: The building is fair, the cement floors are good, and there is a satisfactory drain. Toilet conditions are not satisfactory. The pulp is made from refuse, five pounds of salt being used to the barrel. Notice given to discontinue the use of galvanized iron buckets.

SHELBYVILLE—

Shelbyville Canning Company: The frame building occupied by this company is in good condition, and the wood floors are satisfactory. The

drainage arrangements are adequate, but there are only fair toilet conditions, and no wash-room facilities are provided. The catsup pulp is made from refuse, and five ounces of benzoate of soda is used to the barrel. Ordered, screens, wash rooms, better toilet arrangements and signs for places for washing hands.

SWAYZEE—

Swayzee Canning Company: The building is of frame and brick construction. There is a wood floor and a drain under the building. Toilet conditions are not satisfactory, and as usual no adequate wash-room facilities are provided. The catsup is made from refuse, and benzoate of soda is used when requested by the purchaser. Screens were ordered for this place.

TELL CITY—

Tell City Canning Company: The building is of brick and frame, general conditions are good and the floors are satisfactory. Sewer is used to drain the slops out, and they are then hauled away. Toilet conditions are good and this place has a wash room. Employes are clean and seem to be in good health. Catsup stock is made from whole fruit and from refuse, and eight ounces of benzoate is used to the barrel as a preservative.

TERRE HAUTE—

The Loudon Packing Company: The buildings occupied by this company are in good condition. The floors are satisfactory, being for the most part cement. Separate toilet rooms and wash rooms are provided, but these are not kept in a satisfactory condition, and there is a good deal of accumulated rubbish on the premises. The sewage arrangements are good. The employes are clean and apparently healthy. The pulp at this plant is made from select stock, all bad product being sorted out before the fruit goes to the peelers. This factory put up very few tomatoes the present year, working mainly on a high-grade tomato catsup. No benzoate is used unless so requested by the purchaser, and the management is one of our strongest advocates in favor of nonpreservative goods. Under date of October 10, 1908, the inspector noted "a fine, clean, well-equipped factory." Three inspections were made during the season. The pack this year was at least 60 per cent short.

TIPTON—

Fame Canning Company: The building is in fair condition and the floors are comparatively clean. The sewage system is not satisfactory and the toilet conditions are not all that could be desired. There are no wash-room arrangements, and one-tenth of one per cent of benzoate of soda is used in the catsup pulp, which is made in part from decomposed tomatoes.

UNDERWOOD—

Hoagland Bros.: The frame building is fairly satisfactory, but the floors are not up to the standard. Good toilet conditions prevail and wash-room facilities are provided. Employes are clean and appear to be healthy. The catsup pulp is made in part from refuse, and four ounces of benzoate is used per barrel. This company has spent \$2,000 in improving the factory.

VIENNA—

Vienna Canning and Packing Company: The building occupied by this company is of frame and is in good condition; floors also are satisfactory. The sewage system is good, but the toilet arrangements cannot be wholly approved of. The employes are neat and apparently in good health. Catsup stock is made from the refuse from the tables, and four ounces of benzoate of soda is used per barrel. Five hundred dollars have been spent in improvements.

VINCENNES—

The Dyer Packing Company: This company occupies a good frame building, with satisfactory floors. Refuse is sewerred out of the building and hauled away. Toilet-room conditions are not wholly satisfactory. Employes are clean and are apparently in good health. The catsup stock is made in part from refuse discarded by the peelers, and five pounds of salt is used to the barrel as a preservative.

WABASH—

Wabash Canning Company: The building here is a stone structure in good condition, with cement floors and good toilet-room facilities. The sewage is delivered into a nearby stream. The catsup stock is made from refuse, and no benzoate is permitted by the management.

WARSAW—

Warsaw Canning Company: The building is of frame, in good condition, and the floors are of cement. Sewer arrangements are provided, but there are no wash-rooms nor screens. This year there was no tomato pack.

WINDFALL—

Windfall Canning Company: The frame building is in fair condition, with floors of wood. There is a good drainage system, but the toilet arrangements are not wholly satisfactory. The catsup pulp is made from the refuse; benzoate is used when ordered by the purchaser. Screens are needed for this building.

WESTFIELD—

Westfield Canning Company: The frame building occupied by this company is in only fair condition, and the floors are not satisfactory. There is a good drain and the toilet conditions are not what are required. Galvanized iron buckets were in use. The catsup pulp was made from refuse from the skinning table.

WEST TERRE HAUTE—

West Terre Haute Canning Company: The frame building is in good condition, but the floors are not satisfactory and there are no sewage arrangements. Toilet conditions need improvement and there are no wash-room facilities. On first inspection this company was making no attempt to sort out the bad fruit, this going into the tomato catsup pulp. One hundred and fifty gallons of this pulp was condemned, sorting apparatus was installed at once, and it was ordered, further, that floors be made watertight, a sewage system installed and toilet conditions improved. Three inspections were made for the season.

WORTHINGTON—

Worthington Canning Company: The frame building occupied by this company is used in part as a storage and horse barn. It is in fair condition and the sewage system is good, but no wash rooms are provided. The tomato pulp is discarded. No attempt is made at adequate sorting before the product is dumped into the scalders.

WASHINGTON—

Washington Canning Company: The frame building is not satisfactory. The sewage system is open troughs and ditches. Toilet conditions are not up to requirements. This company is to have a new building next year.

WHITELAND—

Whiteland Canning Company: The frame building is in good condition and the floors are satisfactory. The refuse is got rid of by sewer and by hand. Toilet conditions are only fair. The employees are neat and reasonably healthy. The catsup pulp is made in part from table refuse and is preserved with salt, five pounds to the barrel.

REPORT OF SANITARY INSPECTIONS.

Food adulteration is no more a question of fraud—it has become a question of sanitation. We must not longer ignore the important fact that food, though chemically pure, may be sanitarly unfit to eat. Much has been accomplished along this line during the past year. Although but four inspectors have been in the field, they have made altogether 7,026 inspections in the 243 cities and towns visited.

Out of 503 dairies inspected, 7 were found to be in excellent condition, 75 in good shape, 222 fair, 135 poor and 64 bad. The reports of the work among the dairies shows a great need for improved conditions at this most important place of food production. Much is being done by the dairymen, and although the results of this year's work show little improvement over last year, on the whole the success of the inspectors in arousing interest and stimulating the dairymen to greater energy in the production of wholesome milk is gratifying.

Of the 1,577 groceries inspected, 44 were in excellent condition, 718 good, 727 fair, 76 poor and 12 bad. The grocery trade has made a great advance in its method of conducting business. While the inspections still show far too many groceries on the fair and poor list, yet the general improvement in the year just past has been very marked.

But 17 of the 931 slaughter-houses visited have been in such a shape that they could be classed as excellent; 371 were good, 442 fair, 84 poor and 17 were bad. The conditions in the meat markets have materially improved during the past year and many of the slaughter-houses are in better shape than formerly. The necessity for a more rigid inspection of the slaughter-houses and a careful supervision of the business conducted there is absolutely essential if the principles of the Pure Food Law are to be effectively carried out along every line of food manufacture and distribution. That the inspection of meats is even more necessary at the smaller than at the larger plants of the country is indicated by the comparative results of cattle inspection at these two classes of plants, both of which do an interstate business. Relatively twice as many cattle

were condemned for tuberculosis at the smaller plants, and nearly twice as many for all causes. It may with reason be supposed that the local slaughter-house needs inspection even more badly than the small plants now under federal supervision. The boast of "home grown" and "home killed," formerly often heard, is empty. "Home grown" may be all right, but it is sometimes dangerous, as when the local butcher's supplies are drawn from the surrounding dairy herds, since the cattle of such herds are particularly susceptible to tuberculosis. "Home killed," however, in the absence of federal, state or municipal inspection, too often means that the animal is killed without scientific inspection either before or after slaughter. It may be infected with some of the most dangerous and loathsome diseases in the list, and the unskilled butcher never knows it. Too often, too, this phrase means that the killing is done in a small, poorly equipped slaughter-house, without running water and without sewage, and where the word "sanitation" is unheard and unknown. Again, if the butcher happens to be located in a town where inspected houses are situated, or near such a town or city, it is not unreasonable to suppose that sellers having suspicious looking animals will send them to him rather than to the inspected houses, where they must run the gauntlet of expert examination and the risk of reaching the offal tank. More than one instance of the kind is known to the department. In fact, a little reflection shows that the whole tendency of the more rigid inspection under federal law is toward more care on the part of buyers—the refusal on their part to buy suspicious looking animals except subject to inspection—and the consequent diversion of such animals to the local abattoir that has no inspection. Meat animals are subject to many diseases which impair or destroy the wholesomeness of their meat as human food, but the presence or the effects of disease are not always discernible in the dressed carcass. A piece of meat may carry the germs of a dangerous disease without giving any indication of this fact to the consumer. To detect disease there should be an expert inspection at the time of slaughter. To protect the people at a point where they are unable to protect themselves is, generally speaking, the object of meat inspection. Diseased meat is the direct cause of disease in those who eat it. The consumer, being himself unable to determine whether or not the meat he buys is diseased, demands that he be protected by state or government from the cupidity or ignorance, or both, of those from whom he buys. Under present conditions it is not possible for the state to station inspectors at every slaughter-house. The cost of in-

spection would equal the value of the output of many a small plant operated perhaps but one day in the week, and then used only for the slaughter of a beef or two and a few hogs. As with everything else, the question must be approached from its economic side. Is it possible to have local inspection, clean slaughter-houses and guaranteed meat at the same prices that we are now paying for no inspection, filthy houses and, all too frequently, diseased meat? I believe the question can be solved by the state as it has been solved by the federal government. It only remains to suggest a feasible plan for work.

The present method of slaughtering in the city of ten thousand or twenty thousand population is notoriously extravagant and wasteful of labor, capital and product. Six butchers maintain separate plants, each occupying several acres of ground. Each plant has a small killing room, a rendering room, a cold-storage room, a boiler and an outfit of machinery, scales, kettles and other tools of trade. Each plant runs a part of every week; the rest of the time the plant is closed down. Each plant must have, in order to comply with the law, some form of sewage disposal, and either a well of pure water or connection with the city mains.

The business of the separate houses is conducted in a wasteful manner. The one thing desired is to prepare meat for sale over the counter. Very little use is made of the by-products of the slaughter-house, that are in themselves of great value. The blood runs to the sewer; the viscera are fed to hogs, to the disgust of the consumer who knows of the practice and to the detriment of the hogs themselves. The hair and skin and bone may be used for fertilizer, but more frequently bring not one cent of return to the business. In such a place all is grist that comes to the mill. There is no opportunity for selection, no attempt to grade the raw material. One day the average weight of hogs may be 250 pounds, the next day the average may be 100 pounds. One day the consumer gets a steak from a 1,200-pound beef, and his next order may be cut from a 500-pound yearling. There is another reason why one slaughter-house is better than six. The general rule may be laid down that every slaughter-house is a center of infection for the surrounding neighborhood, not only of diseases caused by animal parasites, but also of other diseases, such as hog cholera, swine plague, tuberculosis, etc. The first step to be taken, therefore, is to reduce the number of localities from which infection may spread, and there is evidently only one way to do this, namely, to compel all the butchers of a town to do all of their killing at the same

slaughter-house. If the slaughtering is all done at one place it is comparatively easy to control the class of animals used; but when numerous slaughter-houses exist it is practically impossible to supervise the premises. The raising of hogs and other animals at slaughter-houses is a custom which cannot be too severely condemned, and the farmer who grants to a butcher the privilege of slaughtering on his farm in exchange for the use of the offal as feed, simply bids for disease.

Dogs should be excluded from slaughter-houses and meat shops, and all stray and ownerless dogs should be killed. This will prevent the spread of a number of dangerous parasites. Rats are common factors in spreading disease from slaughter-houses, although they do not come into consideration in connection with any of the parasites discussed in this report.

In the segregation of slaughter-houses, which must come sooner or later, care should be taken to properly dispose of the houses which are deserted. An attempt should be made to kill the rats on the deserted premises in order to prevent their spreading disease by wandering to neighboring farms, etc.

If the department store can do a dozen businesses under one roof more cheaply than a dozen individuals can do the same volume of business, is it not even more probable that one slaughter-house could supply the needs of the city better than six; could furnish better meat, of uniform quality, and eliminate the cost of five plants, the expense of their operation and at the same time make use of valuable material that under different conditions brought no profit to the butcher, and became a nuisance to the surrounding community?

It is not necessary that five butchers go out of business that one may thrive. Each man may be part owner in the new abattoir. Butchering is usually a side business, anyway; a necessary adjunct to the sale of meats. Or, if it is not possible that the various interests can agreeably conduct a partnership business, let private capital or the city itself, as is done in England, build an abattoir and let out the privilege of slaughtering to each butcher at a nominal cost per head slaughtered. Such a plant could be built and utilized by the butchers at a lower annual cost for killing purposes than he could maintain a plant of his own.

But this condition, even when attained, does not solve the inspection problem, unless each municipality provides an inspector. It does, however, pave the way for state inspectors at small cost. To illustrate: A certain district may have a population of 100,000.

located for the most part in six towns, varying from ten to thirty thousand each. Each of these towns will have one well-equipped slaughter-house, owned either by the city, by a stock company of butchers or by private capital. On Monday the state inspector visits the first city; let us call it A. He that day inspects the live animals and dressed carcasses of all the animals that will be needed for consumption during the week. On Tuesday he visits B city and repeats the work. On Wednesday he is at C city, and so on through the week, commencing again with A city on the following Monday. Under this method of operation it will be possible for one inspector to cover a large amount of territory and inspect a great number of carcasses every week. Such a method of inspection offers no new problems. It has been giving very efficient service in Germany for many years. It can just as readily be worked out in Indiana. I know of no other way in which it will be possible for the state to extend to the local consumer that measure of protection that federal inspection now affords. Something must be done. The people are demanding it. The health officer who is familiar with the many unhealthful conditions at the present slaughtering-houses are demanding it. A well-regulated system of slaughter-houses is as necessary to public health as is a well-regulated system of schools to public education.

There remains but little for the sanitary inspector to do at the drug stores. Of the 1,050 stores visited, 808 were in good condition, 57 were graded as excellent, 167 in fair shape, 17 were poor and 1 was bad. The sanitary condition of the hotels and restaurants are not so satisfactory. But 14 of the 728 places visited were in excellent shape; 263 were graded as good, 356 were fair, 83 were poor and 12 were classed as bad.

A great variety of manufacturing establishments, such as creameries, canning factories, ice-cream factories, poultry houses, fish markets, cold storage plants, etc., were visited by the inspectors during the year. Most of these business houses are in good condition with the exception of the poultry houses. Of the 15 places visited, 2 were in good condition, 5 in fair shape, 4 were poor and 4 were bad. At the present time the poultry-house takes rank with the country slaughter-house for filthiness and general unsatisfactory surroundings. An explanation for this condition is carelessness and general lack of thriftiness of the proprietor. So far as we can determine, there is no reason why a poultry-house should not be managed in as cleanly a way as any other place devoted to the manufacture of food products.

One thousand two hundred and eighty-two second inspections of all classes of business have been made, and a general marked improvement has been noted in the sanitary condition.

Two hundred and fifty-eight third inspections have also been made, and the results show an even greater improvement.

The following table gives the summary of results from the 1st of April to the 1st of November, 1907, and the 30th of September, 1908:

SUMMARY OF INSPECTIONS.

Inspections.	Number Inspected.	Number Excellent.	Number Good.	Number Fair.	Number Poor.	Number Bad.
Dairies.....	503	7	75	222	135	64
Groceries.....	1,577	44	718	777	76	12
Meat markets and slaughter houses.....	931	17	371	442	84	17
Drug stores.....	1,050	57	808	167	17	1
Bakeries and candy shops.....	562	24	220	262	44	12
Hotels and restaurants.....	728	14	263	356	83	12
Creameries.....	15	1	10	3	1	0
Milk depots.....	17	0	3	6	5	3
Starch and refining companies.....	1	0	0	1	0	0
Canning factories.....	16	1	8	4	3	0
Ice cream parlors.....	9	1	5	3	0	0
Ice cream factories.....	20	0	9	10	1	0
Wholesale liquor houses.....	5	0	2	3	0	0
Poultry houses.....	15	0	2	5	4	4
Bottling works.....	6	0	3	3	0	0
Fish markets.....	26	2	18	6	0	0
Packing plant.....	1	0	1	0	0	0
Lunch wagon.....	1	0	0	1	0	0
Cold storage plants.....	2	1	0	1	0	0
Total first inspections.....	5,485	169	2,516	2,222	453	125
Total second inspections.....	1,282	70	747	394	64	7
Total third inspections.....	258	23	194	27	14	0
Total fourth inspections.....	1	0	1	0	0	0
Total inspections.....	7,026	262	3,458	2,643	531	132

COMPARATIVE STUDY OF SANITARY CONDITIONS IN 1907 AND 1908.

Inspection.	Year.	Condition.				
		Excellent.	Good.	Fair.	Poor.	Bad.
		Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Dairies.....	1907	5.2	16.2	43.5	19.1	15.8
	1908	1.4	14.8	44.1	26.8	12.7
Groceries.....	1907	4.2	30.9	46.5	8.8	1.4
	1908	2.8	45.5	46.1	4.9	.75
Meat Markets and Slaughter-Houses.....	1907	2.8	35.	47.3	9.9	4.9
	1908	1.8	39.8	47.4	10.1	1.8
Drug Stores.....	1907	8.1	58.4	30.7	3.2	0.0
	1908	5.4	74.5	15.8	1.5	0.0
Bakeries and Candy Shops.....	1907	4.4	40.5	40.8	11.6	2.8
	1908	4.3	40.0	47.4	8.0	2.1
Hotels and Restaurants.....	1907	4.5	34.8	40.5	18.0	3.2
	1908	2.0	34.6	48.9	11.4	1.6

REPORT OF SANITARY INSPECTIONS FROM NOVEMBER 1, 1907, TO SEPTEMBER 30, 1908.

ALBANY, DELAWARE COUNTY—

Eleven inspections were made. One dairy, 2 groceries, 1 bakery and 2 restaurants were found to be in a fair state of cleanliness. Of 2 drug stores, 1 was good and 1 was fair. Two meat markets were in fair shape and 1 slaughter-house was condemned.

ALBION, NOBLE COUNTY—

Eighteen inspections were made. One dairy was found in a bad condition, being very unclean. Five groceries were found to be in good condition. Two meat markets were inspected; 1 was found good and 1 fair. One slaughter-house was found good. Three drug stores were found in good shape. One bakery was found good and 2 fair. Three hotels and restaurants were found in fair condition.

ALEXANDRIA, MADISON COUNTY—

Ten first and 12 second inspections were made. Two groceries, 2 meat markets, 1 fish house, 2 bakeries and 2 restaurants were found to be in fair condition. One bakery was in good condition. The meat markets and the hotels did not have their garbage removed daily. Four of the second inspections were good and 8 were found to be fair.

AMBOY, MIAMI COUNTY—

One creamery was inspected and found in a fair condition. Two canning factories were visited, and 1 was found fair and 1 poor, being in an unclean condition.

AMO, HENDRICKS COUNTY—

One grocery was found to be in fair condition, due to unclean back shop and unclean dried fruits. Seven bottles of syrup were condemned. Of the four second inspections made, 1 drug store, 1 restaurant and 1 meat market were in fair condition, and 1 meat market was in poor condition, the floor, back shop and refrigerator being unclean.

ANDERSON, MADISON COUNTY—

Of 17 stores visited, 8 were found in good condition and 9 in fair condition. Of 12 meat markets inspected, 6 were good and 6 fair. One slaughter-house was inspected and found to be in fair shape. Twelve drug stores were visited and all found to be in good shape. Of 8 bakeries and candy shops 6 were good and 2 fair. Nine hotels and restaurants were inspected, 3 being good, 5 fair and 1 poor, being in an unclean condition.

ANDREWS, HUNTINGTON COUNTY—

Four groceries, 1 meat market, 1 drug store, 1 bakery and 1 hotel were visited and found in good condition. Twelve bottles of extract were condemned.

ANGOLA, STEUBEN COUNTY—

Of 21 inspections made, 3 dairies were found, 1 to be in good condition and 2 in fair condition. Of 5 groceries, 2 were found to be good and 3 fair. The meat market owned by W. L. Braum, Angola, Indiana, was in excellent condition. Two other meat markets inspected were found to be fair. Four drug stores were visited and 3 were found to be in good shape and 1 fair. Two bakeries and confectioneries were found to be in good condition. One slaughter-house was found to be in poor shape, having unclean surroundings. Three hotels and restaurants were visited and found, 2 restaurants to be in only fair condition, having unclean refrigerators, although 1 hotel was found to be good.

ARCADIA, HAMILTON COUNTY—

Of 8 first inspections made, 3 groceries were found to be in fair condition, 1 slaughter-house was found to be in poor shape, and on account of the unsanitary conditions was condemned, 2 meat markets were in fair condition, 4 drug stores were in good shape and 1 restaurant was fairly clean. Three second inspections were made, 1 drug store and 1 bakery were found to be in good shape, while 1 restaurant was fairly clean. Orders were given to keep meats and pies under cover.

ATLANTA, HAMILTON COUNTY—

Of 4 groceries visited, 1 was in good condition and 3 were fair. One slaughter-house was in a bad condition and was condemned. One fish market and two meat markets were in fair shape. Of six second inspections made, 1 bakery, 1 restaurant and 2 groceries were found to be in fair condition. Orders were given to keep pies under cover and to remove garbage daily. Of two drug stores, 1 was in good shape and 1 was fairly clean.

Second Inspection—Two drug stores were found to be good.

ATTICA, FOUNTAIN COUNTY—

Two drug stores were inspected and found to be in good shape.

AUSTIN, SCOTT COUNTY—

One hotel and restaurant was found in fair condition. Six second inspections were made. Of 3 groceries visited, 1 was found good and 2 fair. Two canning factories were found in fair shape. One hotel and restaurant was in fair condition.

AURORA, DEARBORN COUNTY—

Four drug stores were visited, and found to be in good condition.

AUBURN, DEKALB COUNTY—

Two dairies were inspected and found to be in poor shape, the general conditions of the dairies being unclean. Of 7 groceries visited, 5 were found good and the ones owned by M. E. Garrett and Husselman & Daniels were in excellent condition. Three meat markets and 1 drug store were in good shape. Three slaughter-houses were found fair. Two bakeries and confectioneries were found, 1 good and 1 fair. One restaurant was in fair shape, the floors and refrigerators being only fairly clean.

AVILLA, NOBLE COUNTY—

One creamery, 1 grocery, 1 meat market, 1 drug store and bakery were visited, and found to be in fair condition. Two hotels and restaurants were visited, 1 being found good and 1 fair.

BEDFORD, LAWRENCE COUNTY—

Twenty-four first and 23 second inspections were made. Of 11 groceries visited, 6 were in good shape and 5 were fairly clean; 78 cans of meat, 479 cans of baking powder, 62 bottles of catsup and 63 bottles of extract were condemned. Of 4 meat markets visited, 2 were good and 2 fair. Of 2 drug stores visited, 1 was good and 1 fair. One bakery was rated good and 1 only fair, on account of unclean walls and ceiling. Of 5 hotels visited, 1 was good, 1 was fair, 2 poor and 1 bad. Orders were given to have this hotel cleaned up, more light and ventilation provided within 30 days or the place would be condemned and closed. The orders were carried out promptly. Thirteen of the second inspections were found to be good and ten fair.

Five second inspections of drug stores found them all good, as were 2 meat markets, 2 bakeries. The grocery of K. D. Owen was found to be excellent, and Beddoe & Chrisler's drug store was entitled to a like grade.

BEN DAVIS, MARION COUNTY—

One dairy was visited and found in a very poor condition. A ten days' notice was given to put in a concrete floor, tight loft, and to arrange to have twice as much lighting facilities, and whitewash the stable. After these orders are complied with the dairy will be in good condition.

BERNE, ADAMS COUNTY—

Of 6 groceries visited, 5 were found good and 1 fair. One meat market was inspected and found fair. Notice was given to whitewash the sausage room. Two bakeries and candy shops and 2 drug stores were found to be in good condition. Two restaurants were visited, 1 being fair and 1 good. Orders given to place all goods under cases.

BICKNELL, KNOX COUNTY—

Of 14 stores visited, 3 were found good, 8 fair, 2 poor and 1 bad. Notice was given to clean up back yards and stores at once. Twenty pounds of meat was condemned. Seven meat markets were visited. One was found good, 5 fair and 1 bad, being unclean. Three drug stores were found in good condition and 2 fair. Six bakeries and confectioneries were inspected. Three were found fair and 3 bad. Two of the bakeries were condemned until made sanitary. Notice was given to clean up and whitewash. Three hotels and restaurants were visited and found, 1 to be good, 1 fair and 1 poor, having unclean back yard. Notice was given to whitewash the kitchen. Of 17 second inspections made, 5 groceries were found good and 2 fair. Of 3 meat markets inspected, 2 were found good and 1 fair. Notice was given to keep things clean. Six drug stores were visited, 2 being good, 2 fair, and the stores owned by H. B. Fox and Mr. Cox were found to be excellent.

BIRDSEYE, DUBOIS COUNTY—

Two groceries were visited and found to be in good condition. Two drug stores inspected, 1 being good and 1 fair. One canning factory was found to be in fair shape. Two hotels and restaurants were visited, 1 was found fair and 1 poor, the rear room being filthy, walls and ceiling being unclean and the room was poorly lighted and ventilated. Four bottles of extract was condemned.

BLOOMFIELD, GREENE COUNTY—

Ten first inspections and 17 second inspections were made. Of 7 drug stores visited, 5 were good and 2 stores owned by Wm. Arnbaker were in excellent condition. One meat market was in poor shape; orders given to clean up at once. One restaurant was only fair, the dining-room being not well lighted and ventilated and the garbage not removed daily. Three hotels and restaurants were good. Three groceries and 1 bakery were graded fair. Notice served to keep things clean. One slaughter-house fair. One dairy found to be good.

BLOOMINGTON, MONROE COUNTY—

Six drug stores are good, and that of W. T. Bowles is rated excellent. The grocery store of W. O. Blakely Sons is likewise graded excellent. One slaughter-house was found to be in good condition, the proprietor having done a large amount of improving. Eleven second inspections were made. Of 7 groceries, 6 were good and 1 poor. One bakery was found to be only fair. Orders were given to have case provided to keep pies and other pastries. The candy kitchen of Geo. C. Poolitson is rated excellent.

BOONVILLE, WARRICK COUNTY—

One grocery was inspected and found in good condition. Two restaurants were inspected, 1 being good and 1 fair. Twenty-two second inspections were made. Of 13 groceries visited, 10 were found good, 2 fair and 1 poor. Two meat markets, 3 drug stores, and 2 bakeries and confectioneries were inspected, and found to be in good condition. Three slaughter-houses were found to be fair.

BLUFFTON, WELLS COUNTY—

Of the 29 inspections made, 3 dairies were found to be in fair condition, 10 groceries and 2 meat markets were considered fair. Of 5 drug stores, 3 were fair and 2 good. Seven bakeries and candy shops were in fair condition. Two slaughter-houses were in poor shape, the killing floors being unclean. Four restaurants were found to be in fair shape.

BRAZIL, CLAY COUNTY (First Visit)—

Of 10 dairies inspected, 2 were found good, 5 fair and 3 poor, being unclean. Three milk depots were visited, 1 being good, 1 fair and 1 poor. Of 19 groceries inspected, 4 were found to be good, 9 fair and 6 poor, being unclean, poorly lighted and having foul refrigerators. Two meat markets were inspected, 1 being good and 1 fair. Notice was given to clean up back room and yard at once. Four drug stores were visited, 2 being in good condition and 1 fair, and the drug store owned by P. A. Roach was in excellent condition. The confectionery owned by Marvie Jones was in ex-

cellent condition. Four bakeries and confectioneries were fair, 1 good and 1 poor. Three hotels and restaurants were inspected, 1 being fair and 2 good. The confectionery owned by Joseph Spunradi was found in excellent condition.

(Second Visit.)—Three groceries were inspected, 2 were found fair and 1 good. Notice was given to clean up stores and cover confectionery. One meat market was only fairly clean. One drug store was in fair condition. Of 2 bakeries, 1 was good and 1 fair. Notice was given to cover pies and whitewash bakery. Twenty-six second inspections were made. Of 9 groceries inspected, 4 were good, 4 fair and 1 was poor on account of the general unclean condition. Of the 7 meat markets, 4 were good, 1 fair and the meat markets owned by Jones & Co., 512 Main street, and A. N. Runge, Brazil, Ind., were excellent. Of 2 drug stores, 1 was good and 1 fair. Of 4 bakeries and confectioneries the one owned by Marvie Jones was in excellent condition. One confectionery was in good condition and 1 fair. One bakery was in bad shape on account of the uncleanly condition. Two fish markets were inspected, 1 being bad and 1 poor on account of unclean surroundings.

BRIDGEPORT, MARION COUNTY—

On the first inspection, 19 dairies were visited, 8 being fair, 6 poor and 5 bad. On the second inspection, 2 dairies were found good and 4 fair. Those dairies which were condemned on the first inspection were found good on the second inspection.

BUNKERHILL, MIAMI COUNTY—

Of 8 inspections made, 2 groceries, 1 meat market, 2 drug stores and 2 bakeries and confectioneries were found to be in good condition.

CAMPBELLSBURG, WASHINGTON COUNTY—

One meat market, 1 slaughter-house and 2 restaurants were found to be in good condition. One bakery was in a bad condition, having a barber shop, confectionery and restaurant all together. The place was closed. On the second inspection, 2 dairies were visited and found good. One canning factory and 2 drug stores were also found good. One hotel and 1 restaurant were visited and found good, and 1 creamery was found to be in fair condition.

CARTHAGE, RUSH COUNTY—

Three groceries were inspected and found in good condition. One meat market, 1 slaughter-house and 1 restaurant were visited and found in fair condition.

CANNELTON, PERRY COUNTY—

One meat market, 1 slaughter-house and 3 drug stores were found in good shape. Nine second inspections were made. Of 6 groceries visited, 1 was found good, 3 fair, and P. Clemens & Sons' grocery and Clark's department store were found in excellent condition. Two meat markets were found good and 1 restaurant in fair shape. The bakery and confectionery owned by H. Schlemmer was found in excellent condition. The Sunlight Hotel, owned by Geo. W. Pohl, is excellent.

CARLISLE, SULLIVAN COUNTY—

Two dairies were inspected, 1 being found in poor shape. Notice was given to clean up manure. The dairy owned by James McConnell was in excellent condition. One grocery and 1 meat market were found in fair shape. Two drug stores and 1 bakery and confectionery were in good condition. Twenty-five pounds of meat were condemned.

CARMEL, HAMILTON COUNTY (First Visit)—

Eight inspections were made. Of the 3 groceries visited, 1 was good and 2 were fair; 2 meat markets were in fair condition. One drug store was in fair condition. Two bakeries and confectioneries were inspected, 1 being good and 1 fair.

(Second Visit.)—Of 3 groceries inspected, 1 was found good and 2 fair. Two meat markets, 1 drug store, 1 bakery and confectionery and 1 hotel and restaurant were visited and found in fair condition. One creamery was in good shape.

CAYUGA, VERMILLION COUNTY—

Two groceries and 1 drug store were visited and found to be in fair condition. Two meat markets were visited and 1 found to be in fair condition and 1 poor, having unclean refrigerators. Two bakeries were inspected, 1 being fair and 1 was poor, the place being closed until made sanitary. Two restaurants were visited, 1 being fair and 1 poor. Forty pounds of meat were condemned.

CENTERVILLE, WAYNE COUNTY—

Five groceries were inspected and found to be in fair condition. One meat market was in good shape. Two drug stores were in fair condition, 2 restaurants were in fair condition, and 1 slaughter-house was in fairly good shape.

CHARLESTOWN, CLARK COUNTY—

Two drug stores were visited, and found to be in good condition.

CHESTERFIELD, MADISON COUNTY—

Two groceries were inspected and were found to be in fair condition.

CHIRISNEY, SPENCER COUNTY—

Eleven inspections were made. One creamery company was found in good condition. Of 4 groceries visited, 3 were found good and 1 fair. One meat market and 2 drug stores were found to be in good condition. Of 4 hotels and restaurants inspected, 1 was found good and 3 fair.

CHURUBUSCO, WHITLEY COUNTY—

Twelve inspections were made. Five groceries and 2 meat markets were found to be in good shape. One drug store and 1 bakery and confectionery were in good condition. Of three hotels and restaurants, 2 were in good condition and 1 was fairly clean.

CICERO, HAMILTON COUNTY—

One dairy was found to be in fair shape. A new floor was ordered and the ceiling to be repaired. Two groceries were in fair condition. One meat market was in fair shape, while 2 slaughter-houses were condemned.

due to the unsanitary conditions. One restaurant was in good condition and 1 was fair. Five second inspections were made. Two groceries, 1 meat market, 1 drug store and 1 bakery were all found to be in fair shape. All goods were ordered to be covered up.

CLARKS HILL, HAMILTON COUNTY—

Two groceries were inspected, 1 being found good and 1 fair.

CLAY CITY, CLAY COUNTY (First Visit)—

Twelve inspections were made. Of 5 groceries visited, 1 was good and 4 were fair. One refrigerator was unclean and all 5 groceries were dirty. One meat market was in fair condition, due to uncleanness. Of 3 drug stores inspected, 1 was in good shape and 2 were unclean and were rated fair. In one the glasses were not washed in running water, and in the other the goods were not up to date. One bakery was in fair condition, being somewhat dirty. One hotel was in good condition and 1 restaurant was fairly clean. Orders were given to clean up back yard.

(Second Visit.)—One dairy was visited and found to be in poor condition on account of the unclean surroundings. Three groceries were inspected, 2 being fair; notice was given to cover confectionery. One grocery was in poor condition, being unclean. One drug store was found in good shape. Two slaughter-houses were visited; 1 was in poor and 1 in good condition. One canning factory was visited and was in poor condition, as the shelves, counters, walls and back shops were unclean. Nine second inspections were made. Of groceries 1 was good and 3 fair. Notice was given to cover confectionery. One meat market was in fair condition and was ordered papered and the woodwork painted. Two drug stores were found in good condition, although notice was left to correct labels. One bakery was in good condition and 2 restaurants were fair.

CLINTON, VERMILLION COUNTY—

Forty-one first inspections were made. One dairy was found in a fair condition. Notice was given to remove refuse on lot. Of 26 groceries inspected, 5 were found good, 13 fair, 7 poor and 1 bad, having unclean counters and refrigerators. Four meat markets were visited, 2 being fair and 2 poor. Three drug stores were inspected, 2 being good and 1 fair. Of 4 bakeries and candy shops visited, 2 were good, 1 fair and 1 poor, being unclean. One hotel was found good and 2 restaurants fair. Sixty-five pounds of bad meat, 6 bottles turpentine and 11 bottles liniment were condemned. One second inspection was made of a grocery, which was found in good condition.

CLOVERLAND, CLAY COUNTY—

Six dairies were visited and all found in fair shape. Notice was given to fix floors and ceiling and partition off the horses from the cows.

COAL CITY, OWEN COUNTY—

Three groceries and two meat markets were found to be in fair shape. Three dozen cans of vegetable soup and 5 bottles of extract were condemned. One drug store was in good condition. One hotel was in fair condition. Orders were given to paint and whitewash. One restaurant was in poor condition, not being clean.

COALMONT, CLAY COUNTY—

One grocery was inspected and found in fair condition. Notice was given to cover dried fruits and clean back yard and floors. One drug store was found in fair shape. One hotel and restaurant was in poor shape. Notice was given to cover cheese and clean up.

CONNERSVILLE, FAYETTE COUNTY—

Of 6 groceries inspected, 2 were good and 4 were fair. Six meat markets were found in fair shape. Six drug stores were found good, and 6 bakeries and confectioneries fair. Of 5 hotels and restaurants visited, 3 were good and 2 fair. Of 3 slaughter-houses inspected, 2 were found fair and 1 poor, being unclean. Of 16 dairies inspected, 9 were found fair, 5 poor and 2 bad. Several of the dairies were condemned until made sanitary.

COLUMBUS, BARTHOLOMEW COUNTY—

Seventeen first and 42 second inspections were made. The Columbus Co-Operative Creamery Company was found to be in excellent condition. One dairy was visited and found to be in poor shape; orders were given to put down a cement floor and put the place in a sanitary condition within thirty days or the place will be condemned. Of 2 groceries, 1 was in good condition and 1 was fair. One meat market was rated poor, due to unclean refrigerator, floors, shelves and counters, etc. One drug store was in good shape. One bakery was fairly clean. Eleven hotels and restaurants were inspected, 3 were found to be in good condition, 4 were fair and 4 were poor, being unclean and having foul refrigerators. Of the second inspections made, 1 ice cream company was in good condition. Of 2 dairies visited, 1 was good and 1 was fair. Of 19 groceries, 12 were found to be in good condition, 6 were fair and 1 was poor, due to uncleanliness; 226 cans of meat, 82 bottles of catsup, 1,557 cans baking powder and 445 bottles of extracts were condemned. Of 9 meat markets and slaughter-houses, 6 were in good condition and 3 were fair. Seven drug stores were in good condition. Of 5 bakeries and candy kitchens inspected, the confectionery owned by Jaharako Brothers was found to be in excellent shape; 4 were good and 1 was poor, being unclean. Orders were given to clean up at once. Will Wetz owns an excellent grocery, and Theo. E. Otto's drug store belongs in the same class.

COLUMBIA CITY, WHITLEY COUNTY—

Of 3 groceries inspected, the one owned by C. C. Glass was found to be in excellent shape; 2 others were in good condition. Two meat markets, 1 confectionery and 1 drug store were in good shape. F. L. Myers' restaurant was in excellent sanitary condition. Two second inspections were made; the drug store owned by George A. Pontias was found to be in excellent shape. One restaurant was in good condition.

CORY, CLAY COUNTY—

Two groceries and 1 meat market were found to be in fair condition. One drug store was in poor shape, the goods were not clean and up to date, the patents were not properly labeled and the proprietor and clerks were not clean and tidy. Two confectioneries were rated fair, not being in a clean condition.

CORYDON, HARRISON COUNTY—

Three drug stores and one bakery and confectionery were visited and found in good shape. Ten second inspections were made. Four groceries, 3 meat markets, 1 bakery and confectionery, 2 hotels and restaurants were visited and found in good shape.

CONVERSE, MIAMI COUNTY (First Visit)—

Five first inspections were made. One grocery and 1 bakery were found in good shape. One slaughter-house was poor, being unclean. The Agness Pharmacy Company and Lamm & Gift's drug store were in excellent condition. Three second inspections were made, and the 2 groceries and 1 meat market inspected were found in good condition.

(Second Visit.)—Thirteen inspections were made. Of 7 groceries, 4 were good and 3 fair. Two groceries were fair, being somewhat unclean. Two drug stores were in good condition. Two bakeries and confectioneries were found, 1 in fair condition and 1 good. One hotel was in good condition and 1 restaurant was fair.

CRAWFORDSVILLE, MONTGOMERY COUNTY (First Visit)—

Four drug stores were visited, 2 being in good condition, and the drug stores owned by Nye & Boor and Will Coleman were in excellent condition.

(Second Visit.)—Three groceries were inspected, 1 being in good condition and 2 in fair condition; notice being given to cover fruits and confectionery. Of 3 meat markets, 1 was in good condition and 2 in fair; notice being given to cover meats. The drug store of Will Coleman was in an excellent condition. One confectionery and 1 bakery was inspected and found to be in a good and fair condition. Notice was given to cover confectionery and paint bakery.

CROTHERSVILLE, JACKSON COUNTY—

Two first inspections were made. One canning factory was found in good condition. Thirteen second inspections were made. Of 6 groceries visited, 5 were found good and 1 fair. Two meat markets were inspected, 1 being good and 1 fair. One slaughter-house and 1 canning factory were found in a fair condition. Two drug stores were found good. One confectionery was in good shape.

CROWN POINT, LAKE COUNTY—

Sixteen inspections were made. Of 7 groceries visited, all were found in good shape. Of 3 meat markets inspected, 2 were found good and 1 fair. Two drug stores in good shape. Two bakeries and confectioneries were visited, 1 being in good shape and 1 fair. Two hotels and restaurants were found fair. Fifteen pounds of beef were condemned. Six dairies were inspected, 1 being fair, 1 poor and 4 bad, being condemned until made sanitary.

CULVER, MARSHALL COUNTY—

Three groceries, 2 meat markets, 1 bakery and confectionery were inspected, and found to be in fair shape. One drug store was found good. Of 6 hotels and restaurants visited, 2 were found good, 3 fair and 1 poor, having unclean surroundings.

DANVILLE, HENDRICKS COUNTY—

Six groceries were inspected, 3 being in good condition and 3 fair. Three meat markets were visited and were in a fair condition. Notice was left to clean and paper the back rooms. Six drug stores were inspected and found in good condition, although notice was left to label goods properly and clean back yards. Three bakeries and confectioneries were found, 2 in good condition and 1 in fair. Four hotels and restaurants were found, 3 in fair condition and 1 in poor condition, being unclean. Notice was given to cover pies and foodstuffs.

DECATUR, ADAMS COUNTY—

Of 5 groceries visited, 1 was in good shape and 4 were fair. Of 7 meat markets and slaughter-houses inspected, 1 was good, 5 were fair, 1 was poor and was condemned. Three drug stores were found to be in good condition. Four bakeries were found to be in fair condition. Four restaurants were inspected, and all were found to be in fair condition. Two dairies inspected, 1 found good and 1 fair. One ice cream company and 1 bottling works found good.

DELPHI, CARROLL COUNTY (First Visit)—

One dairy was inspected, being in a bad condition. Notice was given to clean up at once. Of the second inspection made, 2 hotels and restaurants were inspected and found in fair condition, having unclean back yards and poorly lighted kitchen. Notice was given to keep things clean.

(Second Visit.)—Seven groceries were inspected. One owned by Ralph Hill was in excellent condition. Three groceries were in fair condition, 2 good, and 1 poor, being unclean. Three meat markets were inspected, 2 being in good shape and 1 poor, on account of unclean surroundings. Three drug stores were inspected. The one owned by Mr. Margowski was in excellent condition. One was good and 1 was fair, being somewhat unclean. Three bakeries and confectioneries were found good. Four restaurants and 1 hotel were inspected, and 2 were in good condition, 2 in fair condition. The hotel was poor on account of being unclean.

DENVER, MIAMI COUNTY—

Of four groceries visited, 2 were good and 2 were fair. One meat market, 1 drug store and 1 hotel were in good condition.

DUNKIRK, JAY COUNTY—

Of 5 groceries visited, that of A. F. Smith was found to be in excellent condition, 2 were good and 2 were fair. Three meat markets were found to be in fair shape. Of 3 drug stores inspected, 1 was good and 2 were fair. One bakery and confectionery were found to be in fair condition. One fish house was in fair shape. Three restaurants were visited and all were found to be in a fair state of cleanliness. The kitchens were not well lighted and ventilated and the garbage was not removed daily.

DUBLIN, WAYNE COUNTY—

Four groceries, 1 meat market, 2 drug stores, and 1 restaurant were inspected and found to be in fair condition.

EATON, DELAWARE COUNTY—

Four groceries, 2 meat markets, and 1 restaurant were inspected and found to be in fair condition. Two drug stores were found in good condition.

EDINBURG, JOHNSON COUNTY—

Sixteen inspections were made. Of 5 groceries visited, that owned by Chupp Brothers was found to be in excellent shape, 4 were in good condition. Two meat markets were in good shape, 1 slaughter-house was fair and 1 was good; 1 poultry house was in fair shape. One starch and refining company was found to be in good shape. Two drug stores, 1 hotel and 1 restaurant were found to be in good condition. One bakery was in good condition and 1 confectionery and fruit stand was rated fair. Twenty-seven cans of meat, 61 cans baking powder and 4 bottles of extract were condemned.

A second inspection of drug stores found each of them in good condition.

EDWARDSPORT, KNOX COUNTY—

Five groceries were inspected and found in fair condition, the shelves, counters and back rooms being unclean. One meat market was found in a fair condition. One drug store was in fair shape. Notice was given to look through the stock and bring it up to date. One restaurant was found in a bad shape, being unclean.

ELLISTON, GREENE COUNTY—

One second inspection was made. The grocery was found in fair shape. Notice was given to keep the floor clean and prohibit spitting on the floor.

ELKHART, ELKHART COUNTY—

One drug store was inspected and found to be in good condition.

ELWOOD, MADISON COUNTY—

Two drug stores were visited and found in good shape.

ELNORA, DAVIESS COUNTY—

Of 7 groceries visited, 4 were good, 2 fair, and 1 poor, being unclean. Word was left to cover dried fruits. One meat market was found to be very unclean. Notice was given to clean up at once. One slaughter-house was found in a poor condition, being unclean. One drug store and 1 confectionery were found in fair shape. Of 4 restaurants and hotels visited, 2 were found fair, 1 poor and 1 bad. One of the restaurants was closed until made sanitary.

ELWOOD, MADISON COUNTY—

Eleven inspections were made. Of two groceries inspected, 1 was found good and 1 fair. Of two meat markets, 1 was good and 1 fair. Five drug stores were found good. Two bakeries and confectioneries were in fair shape. Goods were ordered put under cases.

ENGLISH, CRAWFORD COUNTY—

Three hotels and restaurants were inspected, 2 being in fair condition and 1 poor. The restaurant was condemned. Eight second inspections were made. Three groceries and 1 drug store were found in good condition.

EVANSVILLE, VANDERBURGH COUNTY—

One grocery was found in good shape. Thirteen drug stores were inspected and found in good condition. Two confectioneries were inspected, 1 being in good condition, and the Meyer Candy Company was found excellent. One restaurant was fair, being unclean, poorly lighted and ventilated. Four hundred and eighty cans of meat, and 48 bottles of extract were condemned. Of the second inspections made, 4 groceries were visited, 2 being good and the Cook Grocery Company, and the grocery owned by W. E. Meier were found to be excellent. One meat market was found in a fair shape. Twenty-two drug stores were found to be good. One bakery and confectionery were good, and the Sugarbowl Confectionery was excellent. One restaurant was in good condition. One poultry house was found poor, having no drainage. On the second inspection, 39 dairies, 2 slaughter-houses and 1 packing company were visited. Of the 39 dairies inspected, 24 were found good, 11 fair, 2 poor and the 1 owned by John G. Herman, Jr., was in excellent condition. The dairies rated poor were ordered to have new roofs and concrete floors for their dairies and better feeding connections, and to have the manure on lot removed. Three slaughter-houses were inspected, and 2 were found good and 1 poor. One packing company was found fair.

On second inspection, 43 drug stores were found to be in good condition.

FAIRMOUNT, GRANT COUNTY—

Of 4 groceries inspected, 3 were good and 1 fair. Forty-two bottles of extract were destroyed. Two meat markets were found in good shape. Of 3 drug stores, 2 were found good and 1 fair. One confectionery and 2 restaurants were in good condition.

FARMLAND, RANDOLPH COUNTY—

Of 4 groceries inspected, 1 was found good and 3 fair. Two dozen bottles lemon extract and 1 dozen bottles of vanilla extract were thrown out of stock. Three meat markets were found fair, and 1 slaughter-house was found fair. The hides were ordered to be put in a separate room. One bakery was in fair shape, and 1 restaurant and barber shop were found to be in fair condition.

FLORA, CARROLL COUNTY—

Of 3 groceries inspected, 2 were found good and 1 fair. Notice was given to clean up thoroughly. Two meat markets were inspected, 1 being good and 1 fair. Of three drug stores visited, 1 was good and 2 fair, the walls and ceilings being unclean and the store is poorly lighted and not ventilated. The bakery owned by J. S. Mills is excellent. Two poultry houses were inspected, 1 being poor and 1 fair, having unclean surroundings. Two restaurants and 1 hotel were inspected and found to be in good condition. Ten packages pancake flour and 2 dozen boxes of baking powder were condemned.

FORT BRANCH, GIBSON COUNTY—

Two drug stores were visited and found in good shape. Seven second inspections were made. Three groceries and 1 meat market were found to be in good condition. One bakery was visited, and found in poor condition. Notice was given to keep pastry well covered. Of 2 restaurants visited, 1 was found good and 1 fair.

FORTVILLE, HANCOCK COUNTY—

Fifteen inspections were made. One dairy was found to be in a poor condition. Thirty days were given to make the necessary changes. Of 3 groceries visited, 2 were found good and 1 fair. One creamery, 2 drug stores, 2 bakeries and 1 restaurant were inspected, and found to be in good condition. Two slaughter-houses were visited, and 1 was found fair and 1 poor. Of 3 meat markets visited, 2 were found good and 1 fair. Twenty-five pounds of beef were condemned. One creamery was in good condition.

FORT WAYNE, ALLEN COUNTY (First Visit)—

Of 11 dairies inspected, 1 was found in very good condition. 9 fair and 1 bad. The sanitary conditions were very bad and the place was condemned. Of 6 groceries visited, 4 were found good and 2 fair. Of 5 meat markets inspected, 4 were good and 1 fair. Four fish markets were visited, and 2 were found in poor condition, 1 fair and 1 good. Three slaughter-houses were inspected. One was in fair shape and 2 were in bad shape, being very unclean. Of 8 drug stores inspected, 6 were fair, and the stores owned by Diebald & Niebergall and Julia E. Emanuel were in excellent condition. Four bakeries and candy shops were visited, 2 being fair and 2 poor, being very unclean and untidy. The candy was also exposed. Of 10 hotels and restaurants visited, 7 were in good condition and 3 fair. Eight pounds of fish, 5 pounds of meat, 6 pounds of beef and one 5-pound chicken were condemned.

(Second Visit.)—Fourteen first inspections were made. Two dairies and 1 bottling works were visited, and found to be in a fair condition. Of 3 groceries visited, 1 was found good and 2 fair. Of 8 meat markets inspected, 5 were found good, 2 fair and 1 poor, being unclean, poorly lighted and having a slimy refrigerator. On the second inspection, 1 meat market was visited and found to be in a fair condition.

(Third Visit.)—Of 6 groceries inspected, that owned by Coverdale & Archer was found to be in excellent condition, 5 were in good shape. Of 6 meat markets and slaughter-houses visited, that owned by Frank Strodel was found to be in excellent condition, 5 were in good shape. The confectionery owned by A. C. Aurentz was found to be in excellent condition, 1 was fair, the candies were ordered to be covered. Four second inspections were made. Two drug stores were found to be in good condition. One fish market was in good shape and 1 slaughter-house was poor, being unsanitary.

FRANCESVILLE, PULASKI COUNTY—

Four groceries, 2 meat markets, and 2 drug stores were visited and found in good condition. One dairy and 2 restaurants were found to be in fair shape. One slaughter-house, 1 pickle factory and 1 bakery were in poor condition, the bakery having no drainage, the roof leaking and the floor in bad shape.

FRANKLIN, JOHNSON COUNTY (First Visit)—

Of 4 dairies visited, 1 was fair, 2 poor and 1 bad, being condemned until made sanitary. One canning factory was found good.

(Second Visit.)—Two groceries, 1 bakery and 1 restaurant were inspected and found to be in good condition. Seventeen cans of meat were condemned. Twenty-eight second inspections were made. Nine groceries, 5 meat markets, 4 drug stores and 3 bakeries and confectioneries were found to be in good condition. Six hotels and restaurants were inspected, 3 being good, 2 fair and 1 poor. One ice cream parlor was visited, and found in fair condition. One hundred and seventy cans of meat, 92 bottles of extract, 91 cans of baking powder, and 12 packages of pancake flour were condemned.

Four third inspections were made of drug stores. All were found in good condition.

FOWLER, BENTON COUNTY—

Of 5 groceries inspected, 2 were found good and 3 fair. Notice was given to keep bread in case and the cat off the counter. Two meat markets were found to be in fair shape, although notice was left to clean up. Two drug stores were found good. Of 3 bakeries and confectioneries, 2 were good and 1 poor, being unclean. Of 3 hotels and restaurants, 3 were found fair, notice being given to clean back yards and refrigerators. Fifteen bottles of flavoring extract and 3 dozen boxes of baking powder were condemned.

FREEDOM, OWEN COUNTY—

Of 3 groceries visited, 2 were good and 1 was fair. Notice was given to keep things clean and covered. One meat market was inspected and found to be in a poor shape, the general conditions being unclean. Two drug stores were found unclean. One poultry house was in poor shape, being unclean. Of 4 hotels and restaurants, 2 were found fair and 2 poor, being unclean. Ten bottles of catsup were condemned.

FRENCH LICK, ORANGE COUNTY—

Three groceries were inspected, 2 were in good condition, and the one owned by Smith, Claxton & Cave was in excellent condition. One dairy was inspected and found in good condition. Three meat markets were visited, and 2 found in good condition, and the one owned by Smith, Claxton & Cave was in excellent condition. Three bakeries and confectioneries were inspected, 2 being in good condition and 1 fair. Of 6 hotels and restaurants, 5 were good and 1 fair. Seven cans of meat were condemned. Fifteen second inspections were made. Three groceries, 2 meat markets, and 3 drug stores were found to be in good condition. Seven hotels and restaurants were inspected, 6 being good and 1 fair. French Lick Hotel rated excellent.

FULTON, FULTON COUNTY (First Visit)—

Ten inspections were made. Of 5 groceries visited, 4 were found good and 1 fair. One meat market was rated fair. One drug store and 1 bakery were inspected and found good. One hotel was found good and 1 restaurant fair.

(Second Visit.)—Four groceries were inspected, 1 being good, 2 fair and 1 poor, having unclean surroundings. One meat market was in poor condition, being unclean. One drug store was in fair condition, 1 bakery in good shape, 1 slaughter-house in poor condition, being unclean. One hotel and 1 restaurant were in good condition.

GALVESTON, CASS COUNTY—

One grocery and 1 drug store were inspected, and found to be in good condition. One bakery and 2 restaurants were visited, and found in fair condition.

GARY, LAKE COUNTY—

Of 18 groceries inspected, 2 were good, 11 fair and 5 poor. Of 20 meat markets inspected, 3 were found good, 12 fair and 5 poor. Of 10 bakeries and candy shops visited, 2 were found good, 4 fair, 2 poor and 2 bad, the bakeshops being unclean, employes not clean and tidy, and the goods not properly handled. Of 6 hotels and restaurants inspected, 4 were found fair, 1 poor and 1 bad, being very unclean. One milk depot was found fair. One hundred and fifty pounds of meat were condemned.

GAS CITY—

Of 11 groceries inspected, 6 were found good and 5 fair. Two bottles maple syrup, 5 bottles extract and 6 bottles of pickles were thrown out of stock. Of four meat markets, 2 were found good and 2 fair. Three drug stores were found good. One bakery visited and found in fair condition. Of 4 hotels and restaurants, 1 was found good and 3 fair.

GENEVA, ADAMS COUNTY (First Visit)—

Ten inspections were made. Of 2 groceries inspected, 1 was good and 1 fair. Two meat markets were inspected, 1 being good and 1 fair. Of 2 restaurants visited, 1 was good and 1 fair. Three drug stores and 1 bakery were found in good condition.

(Second Visit.)—Thirteen inspections were made. Three groceries were found to be in a fair state of cleanliness. Of 4 meat markets and slaughter-houses visited, 1 was good, 2 were fair and 1 was bad and was condemned. Two drug stores were in good shape. Two bakeries and 2 restaurants were found to be in fair condition. Orders were given to place goods under cases.

GOSPORT, OWEN COUNTY (First Visit)—

Five groceries were visited and found in fair shape. Notice was given to clean floors and back yard. One meat market was fair. Two drug stores good. Two hotels and restaurants were visited, 1 being good and 1 fair. Notice was given to clean up at once. Seventeen bottles of pickles were condemned. Two poultry houses were inspected, 1 being fair and 1 poor. Notice was given to clean up. One restaurant was found to be fair. Notice was given to clean up the back yard at once. Of the second inspection made, 5 groceries were visited, 3 being fair and 2 poor; the back yard, rooms and shelves unclean. Of 2 meat markets inspected, 1 was fair and 1 good. Notice was given to clean back yard at once. Two drug stores and 2 restaurants were found in good condition.

(Second Visit.)—Six groceries were inspected, 4 being good and 2 fair. Notice given to clean things up and keep clean. Two meat markets were both good. The 2 drug stores were both good. Druggists were asked to look over stock and correct labels. Two bakeries and confectioneries were good. Two hotels and restaurants were visited, 1 of which was good and 1 fair; notice was given to clean up outside.

GOSHEN, ELKHART COUNTY—

Of 5 dairies inspected, 3 were found fair and 2 poor. One creamery and 3 drug stores were found good. One bottling works and 2 restaurants were found in fair shape. One slaughter-house was in bad condition, being unclean and having accumulation piled at the slaughter-house door. Of 8 meat markets visited, 5 were found good and 3 fair. Of 13 groceries inspected, the one owned by J. E. Baker was found to be in excellent condition. Ten groceries were found good and 2 fair. Three confectioneries were inspected and found good, and 1 bakery, owned by Tobias Bros., was in excellent condition. Of the second inspections made, 2 groceries, 2 drug stores, and 1 restaurant were found to be in good condition.

GREENCASTLE, PUTNAM COUNTY (First Visit)—

Of 8 first inspections made, 1 grocery and 1 meat market was in fair condition. Notice was given to cover dried fruits and clean up. One drug store was in good condition. Of 5 hotels and restaurants visited, 2 were good, 2 fair and 1 was poor, having unclean refrigerators and walls and ceilings. Of 8 second inspections made, 3 groceries were visited, 1 being good and 1 poor. Notice was given to clean up around store. The Zeis Store No. 2 was found to be in excellent condition. Two bakeries and confectioneries were inspected, 1 being fair and 1 poor. Notice was given to clean up at once. Two restaurants and 1 hotel were inspected and found to be in fair condition. Of the third inspection made, 1 meat market was found to be in good condition. Of 4 drug stores inspected, 2 were good and 1 fair. The drug store owned by W. W. Jones was in excellent condition. One bakery was found to be in fair shape. One fourth inspection was made of a grocery which was in fair condition. Notice was given to clean up store and cover cheese.

(Second Visit.)—Five groceries and 1 meat market were inspected and found in good shape. The drug stores owned by Dr. Jones, Greencastle, and the Red Cross Drug Co. were in excellent shape. One bakery was in poor shape, being unclean. One fish market was fair. Of 3 hotels and restaurants, 1 was good and 2 fair; notice was given to clean up and cover pies. Eight second inspections were made. Zeis & Co.'s store was excellent. Two meat markets were good. Of 2 drug stores, 1 was good and 1 fair. One bakery was fair. Two hotels and restaurants were poor. Notice was given to clean up and provide cases for pies. Five third inspections were made, and 2 groceries, 1 restaurant, 1 meat market were found to be in good condition. Dr. W. W. Jones' drug store was excellent.

(Third Visit.)—Twenty-five first inspections were made. Of 7 dairies visited, 2 were found good, 3 fair and 2 poor. Seven groceries were visited, 3 being good and 4 fair. Two meat markets were found in good shape. Of 4 restaurants inspected, 3 were found fair, and 1 bad, being very unclean.

Five drug stores were visited, and 1 was found good and 4 excellent. Those rated excellent belong to Dr. A. B. Jones, The Owl Drug Company, Badger & Green, and Mr. Dunlavy. Five third inspections were made. Of 5 drug stores inspected, 3 were found excellent, 1 good and 1 fair.

GREENSBURG, DECATUR COUNTY—

Of 10 groceries inspected, 9 were fair and 1 good. Six meat markets were fair. Five drug stores were good. Six bakeries and confectioneries were good. Of 4 slaughter-houses, 2 were fair, 1 poor and 1 bad, because of unclean surroundings. The 8 hotels and restaurants were all fair. The 4 lunch carts were in fair condition.

GREENTOWN, HOWARD COUNTY—

Twelve inspections were made. Of 6 groceries visited, 5 were found in good condition and 1 fair. One meat market was good. One drug store, 1 bakery and 2 restaurants were found in fair condition. Goods were ordered kept under cases. Five bottles of extract were destroyed.

GREENWOOD, JOHNSON COUNTY—

One grocery, 1 meat market, 1 bakery and confectionery, and 1 restaurant were visited, and found to be in fair shape. Of 4 dairies visited, 1 was found fair and 3 bad. Ten days was given to remove manure from lot, put in a partition between cows and horses, and screen milk houses. On the second inspection, 1 dairy and 3 meat markets were visited. The dairy was found in fair shape, and 2 groceries were found good and 1 poor, being unclean.

Of 6 groceries visited, 2 were good and 4 were fair. Of 4 meat markets, 2 were good and 2 fair. One drug store was in good shape, 2 bakeries fair, and 1 dairy was good. The R. L. Polk canning factory is in excellent condition and is a model plant in every respect. Of 3 hotels and restaurants, 2 were good and 1 fair. Two ice cream parlors were good. Thirty-seven cans of meat, 162 cans of baking powder, 18 bottles of extract and 60 cans of fruit were condemned.

HAMMOND, LAKE COUNTY (First Visit)—

Thirteen inspections were made. Of 6 groceries inspected, the following were found to be in excellent condition: Kaufmann & Wolf and Johnson & Silagzi Company; 1 was in good condition and 3 were fair. One had a dirty back room and refrigerator. Of 4 meat markets and slaughter-houses visited, Johnson, Silagzi & Co.'s meat market was found to be in excellent shape; 1 was good and 2 were fair. The drug store owned by Kauffmann & Wolfe was found to be in excellent shape. One bakery and 1 restaurant were in fair condition.

(Second Visit.)—Two groceries, 2 meat markets, and 2 drug stores were inspected and rated good. Of 7 dairies visited, 1 was found fair, 4 poor and 1 bad, the conditions as to lighting, drainage, ventilation and cleanliness being bad. Six milk depots were visited, 4 being fair and 2 bad, as they were in an unsanitary condition, and were condemned. Two bakeries were visited, 1 was found to be poor and 1 bad. The buns, rolls and pies were exposed to flies and dirt, and the flour room was covered with cobwebs. Four hotels and restaurants were visited, 1 being good and 3 fair.

HANOVER, JEFFERSON COUNTY—

Five inspections were made. Of 4 groceries visited, 1 was found to be good and 3 fair. One meat market was in a fair condition.

HARTFORD CITY, BLACKFORD COUNTY—

Two dairies were inspected and were found to be in a fair and poor condition. Orders were left to put in a new floor, whitewash and place premises in a sanitary condition. Of 6 groceries inspected, 5 were fair and 1 was poor, being unclean. Of ten meat markets and slaughter-houses inspected, 1 was good, 7 were fair, 1 was poor, 1 was bad and was condemned. Six drug stores were found in good condition. Three restaurants and 1 confectionery were found to be in fair condition.

HAUGHVILLE, MARION COUNTY—

Two dairies were inspected, and 1 was found to be fair and 1 bad. The place was condemned and closed until made sanitary.

HENRYVILLE, CLARK COUNTY—

One first inspection was made of a drug store, which was found to be in a fair condition. Nine second inspections were made. Of 6 groceries inspected, 3 were found fair and 3 good. One meat market, 1 canning factory and 1 ice cream parlor were visited and found in fair shape.

HOPE, BARTHOLOMEW COUNTY (First Visit)—

Eighteen inspections were made. Of 9 groceries visited, 5 were in good condition and 4 were fairly clean. Two meat markets were found to be in good shape and 2 slaughter-houses were in a poor condition and were given ten days' notice to comply with the law and put their places in a sanitary condition. Two drug stores were visited; 1 was good and 1 was fair, due to the unclean prescription counter. One bakery and confectionery was in poor condition. Orders were given to clean up at once. Fifty cans of fruit, 41 bottles of extracts, 110 cans baking powder and 18 bottles of catsup were condemned.

(Second Visit.)—Ten inspections were made. Four groceries and 2 drug stores were inspected and found in good shape. Of 2 meat markets visited, 1 was found good and 1 fair. One bakery and confectionery and 1 hotel were visited and found in a fair condition.

HUNTINGBURG, DUBOIS COUNTY—

One second inspection was made of a hotel and restaurant, and each were found fair. Three drug stores were inspected for the third time, two being good, and that of A. H. Miller, Jr., reported as excellent.

HUNTINGTON, HUNTINGTON COUNTY—

Twenty-seven inspections were made. Of 9 groceries inspected, 8 were found good and 1 fair. Of 5 meat markets visited, 4 were found good and 1 fair. One slaughter-house was rated fair. Of 7 drug stores visited, 6 were found good and 1 poor, the stock being not properly labeled. Of 3 bakeries and confectioneries visited, 2 were found good and 1 fair. Of 2 restaurants inspected, 1 was found to be in good condition and 1 fair.

IDAVILLE, WHITE COUNTY—

Of 3 groceries visited, 1 was good and 2 fair. Notice was given to keep things clean and covered. One drug store was good. Two hotels and restaurants were in fair condition only.

INDIANAPOLIS, MARION COUNTY (First Visit)—

Forty-seven inspections were made. Of 8 groceries visited, 2 were in good condition, 5 were fair and 1 was poor, having an unclean refrigerator, shelves, counters and floor. Of 4 meat markets, 1 was good, 2 were fair and 1 was poor, being unclean. Of 7 bakeries and confectioneries, that of Robert Bentley was found to be in excellent shape, 3 were good, 1 was fair and 2 were in poor condition, being unclean. All candles and pastry were ordered to be placed under cover. Twenty-eight hotels and restaurants were inspected, of which G. J. Gavin's restaurant was found to be in excellent shape, 10 were in good condition, 9 were fair and 8 were poor, 3 had unclean refrigerators, all 8 had unclean floors, walls and ceilings.

(Second Visit.)—Of 9 groceries inspected, 1 was found good, 5 fair, 2 poor and 1 bad, being unclean, poorly lighted and ventilated. One meat market was in fair condition, the general surroundings being unclean. One hundred and seventeen drug stores were visited. The one owned by T. W. Hollenback was in excellent condition. Seventy-four were found good, 41 fair and 1 poor. Two bakeries and 1 confectionery were visited; 1 was found good and 2 poor, being unclean.

(Third Visit.)—Ninety-two inspections were made. Of 22 dairies inspected, 4 were found good, 9 fair, 7 poor, and 1 bad, being badly lighted, poorly ventilated and very unclean. The dairy owned by Carey & Son was in excellent condition. Two milk depots and 2 ice cream factories were rated good. Of 47 drug stores inspected, 38 were found good and 9 fair. Of 5 confectioneries visited, 2 were found fair and 3 poor, having unclean floors, walls and ceilings. Four poultry houses were inspected and found in bad condition, having unclean floors, walls and ceilings and poor light and ventilation. Ten restaurants were visited, and 4 were found in good condition and 6 fair. One case of dirty milk was condemned. At the State Fair the inspectors condemned and threw away 35 pounds of pork chops, 30 pounds of fish and 30 gallons of lemonade.

INDIANA HARBOR, LAKE COUNTY—

Of 5 dairies inspected, 1 was found fair, 1 poor and 3 bad, as they were poorly lighted, badly ventilated and very unclean.

INDEPENDENCE, WARREN COUNTY—

Of 3 groceries inspected, 2 were found good and 1 bad, being very unclean. Notice was given to clean up and keep clean. One drug store was visited and found that a grocery, drug store and barber shop were all in one room, and in a very filthy condition. Notice was given to clean up immediately. Two restaurants and hotels were inspected and found to be in fair shape. Notice was given to clean up back yard.

INGALLS, MADISON COUNTY—

Three groceries were found to be in fair shape. One meat market was fair and 1 slaughter-house was in poor shape, being unsanitary. A

new floor was ordered and the offal to be removed from the slaughter-house. One drug store and 2 bakeries were found to be in fair condition. The walls of the bakeries were ordered to be plastered.

JASONVILLE, GREENE COUNTY—

Of 3 groceries inspected, 1 was good and 2 were fair. Notice was given to cover cheese and clean up. One confectionery was found to be in fair condition. Two restaurants were visited, and 1 was in fair condition and 1 in poor condition. Notice was given to cover pies, clean and paint kitchen. Of the second inspections made 2 groceries were inspected, 1 being fair and 1 poor, being unsanitary. One meat market was found to be in poor condition, being unclean. Two drug stores and 1 restaurant were found to be in good condition.

JEFFERSONVILLE, CLARK COUNTY (First Visit)—

Seven first inspections were made. Of 6 dairies visited, 3 were found good and 3 fair. One canning factory was found good. On the second inspection, 1 slaughter-house was visited and rated good. Three third inspections were made. One grocery and meat market was found in good shape. One slaughter-house was rated fair. Nine drug stores were reported good. Best Bros' grocery was excellent.

(Second Visit.)—Twenty-five groceries were visited, 8 of which were good and 17 fair. Of 9 meat markets 4 were good and 4 fair. One meat market and 1 fish market were in bad shape, due to uncleanness. One drug store was fair. Two hotels and restaurants were poor and were condemned until conditions are made right. One hundred and forty cans of meat, 289 cans of baking powder, 42 bottles of extract and 25 pounds of spices were condemned. Thirty-one second inspections were made. Of 11 groceries visited, 8 were good, 2 fair and the one owned by Best Bros. was in excellent condition. Of 4 meat markets, 2 were good and 2 fair. One fish market was fair. Eight drug stores were visited and found in good shape. Of 5 bakeries and confectioneries, 3 were good and 2 fair. One slaughter-house was good. Two hotels and restaurants fair. One opossum, 132 cans of meat, 188 cans of baking powder and 13 bottles of extract were condemned.

JONESVILLE, GRANT COUNTY—

Of 5 groceries inspected, 4 were good and 1 was in fair condition. Ninety-two bottles of extract were thrown out of stock. Two meat markets, 2 drug stores, 1 restaurant and 1 bakery were in good condition.

KENTLAND, NEWTON COUNTY—

One dairy inspected and found to be in poor condition, due to the unclean surroundings. Of 5 groceries, 4 were good and 1 fair. The 2 meat markets were both good, and 2 bakeries and confectioneries fair. Of 9 hotels and restaurants, 8 were good and 1 fair. One ice cream parlor was fair only.

KEWANNA, FULTON COUNTY—

One dairy was inspected and found in a poor condition, being dirty, poorly lighted and not ventilated. Two groceries, 2 meat markets, and 2 drug stores were visited and found in good shape. One bakery, 1 hotel and 2 restaurants were visited, and found to be fair.

KOKOMO, HOWARD COUNTY (First Visit)—

Twenty-three first and 17 second inspections were made. Of 5 groceries inspected, 2 were in good condition and 3 were fair. One poultry house, 1 fish and oyster house, 1 meat market and 1 slaughter-house were found to be in fair condition. One slaughter-house was in good shape. Of 3 drug stores, 2 were in good shape and 1 was fairly clean. Of 5 bakeries and confectioneries, 3 were good and 2 were fair. Four restaurants were in fair condition, the garbage was not removed daily and they were all somewhat dirty. Of the 17 second inspections, 8 were in good condition and 9 were fair. Eleven drug stores were inspected, 10 being good and 1 fair.

(Second Visit.)—Two dairies were inspected and found in a poor condition. Orders were given to cell the ceilings, whitewash rooms and brush down the cobwebs, and devise some means of ventilation. Of 11 groceries visited, 9 were found good and 2 fair. Of 5 meat markets, 3 were good and 2 fair. Two fish markets were visited, 1 being good and 1 fair. Twelve drug stores were found good and 1 fair. Two slaughter-houses were found, 1 good and 1 fair. Of 9 bakeries and candy shops inspected, 5 were found good and 4 fair. Of 9 hotels and restaurants visited, 7 were found fair and 2 poor, being unclean. One sanitary milk company was visited and found to be in a fair condition.

KNIGHTSTOWN, HENRY COUNTY—

One ice cream parlor was visited, and found in a fair shape. Six groceries, 4 meat markets, 1 slaughter-house, 3 drug stores, 2 bakeries and 3 restaurants were inspected, and were all found in good condition. Thirty-four bottles of extract were condemned.

KNOX, STARKE COUNTY—

Of 4 groceries inspected, 2 were found good and 2 fair. Four meat markets were visited, 1 was found good and 3 fair. One drug store, 2 restaurants and 1 hotel were found in good condition. Two bakeries were inspected and 1 was found good and 1 fair. Ten pounds of fish were condemned.

LAFAYETTE, TIPPECANOE COUNTY—

Of 7 dairies visited, 3 were in good condition, 2 fair, 1 poor and 1 bad. Notice was given to put in drain and clean up at once. Of 17 groceries visited, 9 were good, 4 fair, and 2 poor, having unclean conditions. The groceries owned by Joseph E. Beck and Beck & Frash, were in excellent condition. Eleven meat markets were visited. Nine were good, 1 fair and 1 poor, being unclean. Of 14 drug stores inspected, those owned by Schultz & Boswell, Albert Klenly, Wells, Yeoger & Best, Lafayette Pharmacal Co., and Mr. Schnaible, were found in excellent condition. Seven were found good and 1 fair. Of 12 bakeries and confectioneries inspected, W. J. Frowbough and Palma's Confectionery Co. were in excellent condition. Two were found in good condition, 4 fair, 3 bad, being very unclean. Of 4 hotels and restaurants visited, 3 were good and 1 fair.

The Purdue Farm Dairy and the Purdue Creamery were inspected and found to be in excellent sanitary condition.

LAGRANGE, LAGRANGE COUNTY—

One cntsup factory was inspected and found to be in a poor condition. as no screens were provided, the walls, ceilings and floors were dirty, and the factory was poorly lighted and ventilated.

LAPORTE, LAPORTE COUNTY—

Of 10 groceries inspected, 6 were found in good shape and 2 fair. The groceries owned by K. W. Kerr and C. F. Miller & Son were in excellent condition. The meat markets owned by C. E. Miller & Son and Thrush & Barnum were found excellent. One was good and 2 fair. The drug store owned by L. P. Savage was in excellent condition. One was found good and 1 fair. Of 4 bakeries and confectioneries visited, 1 was good and 3 fair. Of 5 hotels and restaurants inspected, 2 were found good, 2 fair and 1 poor, being unclean.

LAWRENCE, MARION COUNTY—

Four dairies were inspected, and 2 were found fair, 1 poor and 1 bad. Notice was given to screen milk house, put in more light, and separate the cows from the horses.

LAWRENCEBURG, DEARBORN COUNTY—

Seven first inspections were made. One meat market, 1 fish market and 1 drug store were inspected and found to be in good condition. Of 3 bakeries and candy shops inspected, 2 were found good and 1 fair. One ice cream factory was in a fair condition. Twenty-four second inspections were made. Of 10 groceries inspected, 6 were found good, 3 fair and 1 poor, having a slovenly-kept stock. Of 6 bakeries and confectioneries visited, 4 were found good and 1 fair, and the confectionery owned by Ernest Kerstuer was in excellent condition. Two slaughter-houses were found good and 1 fair. Three meat markets and 2 hotels were visited, and found in good condition. Five drug stores were visited on the third inspection, and found good.

LEBANON, BOONE COUNTY—

Twenty-nine first inspections were made. Of 7 groceries visited, 2 were found in good shape and 3 fair. Those owned by Creath & Silver and the Pure Food Grocery Co. were in excellent condition. Of 3 meat markets visited, 2 were good and 1 fair. Of 8 drug stores visited, 2 were found good, 4 fair, and 1 poor, being unclean. The one owned by Grafton Allen was in excellent condition. Three bakeries and candy shops were in good shape. Eight hotels and restaurants were visited. Four were found in good shape, 2 fair and 1 poor, being unclean. Frank Dale's restaurant was found to be excellent. One second inspection was made. Creath & Silver's grocery was in excellent condition.

LIBERTY, UNION COUNTY—

Of 7 groceries inspected, 1 was found good and 6 fair. Three meat markets were visited, 1 being good and 2 fair. Of 4 drug stores visited, 3 were found good and 1 fair. Two bakeries, 1 hotel and 2 restaurants were found to be in fair condition.

LIGONIER, NOBLE COUNTY—

One dairy was inspected and found to be in a poor condition, being unclean, poorly lighted and ventilated. Of 8 groceries inspected, 5 were found good and 2 fair, and the Caldwell Grocery Company was in an excellent condition. Of 4 meat markets visited, 2 were found good, 1 fair and 1 poor; the back room and the back of the shop was unclean. Of 3 drug stores inspected, 1 was good and 3 fair. Of 3 bakeries and confectioneries, 2 were found good and 1 fair. Of 4 hotels and restaurants, 3 were found good and 1 fair. One chicken house was inspected and found to be in a fair condition.

LINTON, GREENE COUNTY—

Three first inspections were made. One grocery was found fair, having unclean counters, floors and back room. One meat market was found fair, notice being given to clean up back room. One restaurant was found in a fair condition; orders were given to provide glass case for pies, and to paper and paint the kitchen. Sixteen second inspections were made. One grocery and meat market owned by the Linton Supply Company, was in excellent condition. Four groceries were found to be in good condition. One other meat market was visited and found to be in fair shape. Notice was given to clean up back room and cover prepared meats. Of 4 drug stores inspected, 2 were found good and 2 fair. One restaurant was found in a poor condition, notice being given to provide glass case for foods, paper and paint kitchen. Four confectioneries were visited, 2 were found good, and the confectioneries owned by H. A. Walter and Mr. Murry were in excellent condition.

LINNSBURG, MONTGOMERY COUNTY—

One grocery was inspected and found to be in good condition. Two dozen bottles of extract were condemned.

LOGANSPORT, CASS COUNTY (First Visit)—

One dairy was inspected and found in fair condition. It was recommended that whitewashing be done, and a partition be put between the horse and cow stable, and that lattice doors be put up to keep chickens out of the cow stable. Of 7 groceries inspected, 3 were good and 4 fair. Of 5 meat markets visited, 3 were found good and 2 fair. One slaughter-house was in bad condition, being very unclean. Of 11 drug stores inspected, 9 were found good and 2 fair. Twenty pounds of meat were condemned. Three third inspections were made of slaughter-houses. One was in fair condition, 1 poor and 1 bad, being unclean. Of 4 dairies visited, 2 were found good and 2 fair. One slaughter-house was inspected and found to be in good condition.

(Second Visit.)—One dairy was found in fair condition. Of 2 groceries inspected, 1 was found good and 1 fair. Of 4 meat markets visited, 2 were fair and 2 poor, being unclean and having slimy refrigerators. One drug store was found good. One fish market and 1 restaurant were inspected and found in fair shape. Of 5 bakeries and confectioneries inspected, 3 were found good, 1 fair and 1 poor, the bakeshop being unclean, the goods not properly handled, and the employes were not clean and tidy.

LOGOOTEE, MARTIN COUNTY—

Of 5 first inspections made, 1 grocery was found good, 1 meat market fair, 1 confectionery good, the bakery owned by Joseph H. Carrico is in excellent condition, and 1 restaurant was found to be good. Of 17 second inspections made, 9 groceries were found good; 3 meat markets, 1 good and 2 fair; 3 drug stores and 1 restaurant, good; 3 slaughter-houses and 1 confectionery, fair. Twenty-four cans baking powder, 14 cans of meat and 8 bottles of extract were condemned.

(Second Visit.)—Four second inspections were made. One grocery and 1 slaughter-house were found to be good. One meat market and 1 restaurant were visited and found fair. Fifteen third inspections were made. One slaughter-house was visited and found in poor condition, being unclean. Seven groceries, 1 meat market, 3 drug stores, 2 bakeries and confectioneries and 1 hotel were inspected, and all found to be in good condition.

LYONS, GREENE COUNTY (First Visit)—

Sixteen inspections were made. Of 6 groceries visited, 1 was in good shape and 5 were fair, being unclean. Of 3 meat markets visited, 2 were in fair condition and 1 was in poor shape, having an unclean refrigerator, floor and back shop. Orders were given to clean up. Of 4 drug stores inspected, 3 were good and 1 was fair, due to the dirty condition of the back shop, shelves and counters. The goods carried were not up to date. Of 3 restaurants visited, 1 was fair and 2 were in poor condition, due to uncleanliness.

(Second Visit.)—Sixteen first inspections were made. Of 6 groceries inspected, 2 were found good and 1 fair. Of 3 meat markets visited, 1 was found fair and 2 poor, being unclean and having foul refrigerators. One slaughter-house was found fair. One bakery was found fair. Notice was given to clean up the back room. Of 5 hotels and restaurants inspected, 1 was found good, 2 fair and 2 poor. One of the restaurants was condemned. Ten and one-half pounds of meat were condemned.

MACE, MONTGOMERY COUNTY—

Two groceries were inspected. One was in fair condition and one bad. Notice was given to clean up at once.

MADISON, JEFFERSON COUNTY—

Of 6 dairies inspected, 3 were found good, 1 fair and 2 poor, the buildings being condemned on account of unsanitary conditions. Of 4 groceries visited, 3 were found good and 1 fair. Two poultry houses were found fair. Twenty-seven second inspections were made. Five dairies were visited and found fair. Of 6 groceries inspected, 5 were found good and 1 fair. One fish market and 1 ice cream parlor were found fair. Of 4 bakeries and confectioneries inspected, 3 were found good and 1 fair. Of 8 hotels and restaurants inspected, 3 were found good and 5 fair. One canning factory was inspected, and with the exception of a holey floor, letting the water run through and stand in pools under the floor, the factory would be in good condition. Fifty-six third inspections were made. Of 29 groceries visited, 26 were found good, 1 poor, and the groceries belonging to F. W. Pfortner

and Fred J. Miller were found to be in excellent condition. Nine meat markets, 1 fish market, 1 slaughter-house, 1 chewing gum factory and 1 hotel were visited, and were all found to be in good condition. Of 6 drug stores visited, 3 were found to be good and 1 poor, and the stores owned by James Hargan, Jr., and W. H. Peters, were found to be in excellent condition. Of 8 bakeries and confectioneries visited, 6 were found good, 1 fair, and the confectionery owned by Fred Glass was in excellent condition.

• MARION, GRANT COUNTY—

Of 13 dairies inspected, 9 were found fair and 4 poor, the dairies needing new floors and the walls and ceilings whitewashed. One slaughter-house and 1 bottling works were inspected, and found to be in good condition. Of 6 groceries, 5 were good and 1 fair. Of 5 meat markets, 2 were good and 3 fair. Of 6 drug stores all were good. The 2 bakeries were both fair. Two hotels and restaurants were both fair.

MARTINSVILLE, MORGAN COUNTY (First Visit)—

Twenty first and 16 second inspections were made. Of 4 dairies visited, 1 was in good shape, 2 were fairly clean and 1 was in poor condition, due to uncleanness. Two groceries were in fair and poor condition, being unclean. Ten dozen packages of goods were condemned. Of 5 meat markets and slaughter-houses inspected, 2 were in good condition, 2 were poor and 1 was bad and was condemned. Of 4 bakeries and confectioneries, 2 were in good shape and 2 were fairly clean. Of 5 hotels and restaurants, the Colonial Hotel Company was found to be in excellent shape, 4 were in fair condition, having unclean shelves, tables, sinks, etc. Of the second inspections made, 7 were in good condition, 6 were fair and 3 were in poor shape.

(Second Visit.)—Ten groceries were inspected. Two were in good condition, 5 fair, 2 poor and the grocery owned by C. F. Rose was in excellent condition. Four meat markets were inspected, 3 being fair and 1 poor. Notice was given to clean up at once. Of 6 drug stores inspected, 4 were good and 1 fair. J. M. Carleton's drug store was in excellent condition. Three bakeries and confectioneries were inspected, 2 being good and the one owned by Rompke & Co. was excellent. Two hotels and restaurants were inspected, 1 being good and 1 fair. Fifteen pounds of crackers were condemned. Two second inspections were made. One grocery and 1 meat market were in fair condition.

(Third Visit.)—Thirty-three inspections were made. Of 6 dairies visited, 1 was found good, 2 fair, 2 poor and 1 bad, being condemned until made sanitary. Of 10 groceries visited, 4 were found good and 6 fair. Five meat markets were found in fair shape. Two slaughter-houses were inspected, 1 was condemned until made sanitary, and the 1 owned by Van Lewis was in excellent condition. Four drug stores were inspected, and 3 were found good and 1 fair. One ice cream factory and 1 hotel and restaurant were inspected and found to be in good condition. Of 4 bakeries and confectioneries inspected, 1 was found good, 2 fair and 1 poor, the bake-shop being unclean, the goods not properly handled, and the employees were unclean and untidy.

MEDARYVILLE, PULASKI COUNTY—

Thirteen inspections were made. Of 4 groceries visited, 2 were found good and 2 fair. One meat market was found good and 1 fair. One slaughter-house and 1 bakery were inspected and found to be fair. Two drug stores were visited and found in good shape. Of 3 hotels and restaurants inspected, 1 was found good, 1 fair, and 1 poor, being unclean, poorly lighted and badly ventilated. Five pounds of meat were condemned.

MEDORA, JACKSON COUNTY—

Twelve inspections were made. Of 8 groceries visited, 6 were found good and 2 fair. One meat market was found to be in good shape. One slaughter-house was condemned, being in a very bad condition. One drug store and 1 confectionery were found to be in a fair condition. Forty-three bottles of extract, 47 cans of meat, 149 cans of baking powder and 10 bottles of catsup were condemned.

MEMPHIS, CLARK COUNTY—

Three inspections were made. Of 2 groceries inspected, 1 was found good and 1 fair. One canning factory was inspected and found in fair shape.

MICHIGAN CITY, LAPORTE COUNTY—

Seventeen dairies were inspected, and 1 was found good, 10 fair, 5 poor and 1 bad. One grocery was found good and 1 fair. Two meat markets were found, 1 good and 1 fair. Of 3 slaughter-houses inspected, 2 were poor and 1 was fair. One drug store was rated good. Of 7 bakeries and candy shops inspected, 3 were good, 3 fair and 1 poor. Of 6 hotels and restaurants visited, 4 were found good and 2 fair.

MIDDLETOWN, HENRY COUNTY—

Thirteen inspections were made, two restaurants, 1 bakery, 4 groceries, 2 meat markets and 1 slaughter-house were found to be in fair condition. One slaughter-house was condemned, being very unsanitary. Of two drug stores visited, 1 was in good condition and 1 was fair.

MILFORD, KOSCIUSKO COUNTY—

Two dairies were visited, and 1 was found fair and 1 poor, being unclean. Of 7 groceries visited, 3 were good, 2 fair and 1 poor. The grocery owned by C. C. Neer was in excellent condition. Of 3 meat markets inspected, 2 were found fair and 1 poor, having unclean and slimy refrigerators. One slaughter-house was found in an unsanitary condition. One drug store was rated good and 1 fair. One bakery was rated fair. One hotel was inspected and found in good shape, and 1 restaurant was found fair and 1 poor. Twenty pounds of dried fruit and 20 pounds of dates were condemned.

MILTON, WAYNE COUNTY—

Three groceries and 2 meat markets were visited and found to be in fair condition. Of 2 drug stores, 1 was good and 1 fair. One bakery was in good shape. One slaughter-house was fair. Two hotels and restaurants were visited and found in fair shape.

MILLTOWN, CRAWFORD COUNTY—

Of 13 inspections made, 1 dairy was found in a fair condition. Of 5 groceries visited, 4 were good and 1 was fair. One meat market and 1 drug store were found in good shape. Three confectioneries were found in fair condition, and 1 slaughter-house was found in good shape. Twelve bottles of extract and 4 cans of meat were condemned.

MITCHELL, LAWRENCE COUNTY—

One hotel was inspected and found in a very unsanitary condition. The shelves and tables were unclean, the place was poorly lighted and ventilated, and the employes were unhealthy, one being badly afflicted with skin disease. The place was condemned. One restaurant was found in fair condition. Four second inspections were made. The 4 drug stores were found in good shape.

MONON, WHITE COUNTY (First Visit)—

Eighteen inspections were made. Of 5 groceries visited, 4 were rated good and 1 fair. Of 2 meat markets visited, 1 was found good and 1 fair. Two slaughter-houses were visited and both were condemned for being in very unsanitary condition. One drug store was found good and the one owned by W. D. Handley was found in excellent condition. One ice cream factory was in a fair condition. One bakery was found good and 1 bakery and confectionery was found poor, as the place needed to be painted or whitewashed, and an ice cream factory was in the same room as the bakery. Of 4 hotels and restaurants visited, 3 were found in good condition and 1 fair.

(Second Visit.)—Of 8 groceries visited, 7 were good and 1 was fair, being somewhat unclean. Of 2 meat markets, 1 was in good shape and the one owned by Chas. F. Pate was in excellent condition. The drug store of W. D. Handley was found to be excellent. One bakery and 1 hotel were in good shape.

MONROE, ADAMS COUNTY—

One creamery visited was found to be in good condition. One drug store was in good shape. Four groceries, 1 meat market and 1 restaurant were found to be in fair condition.

MONTICELLO, WHITE COUNTY (First Visit)—

One grocery and 1 meat market were inspected and were found to be in fair shape, due to unclean floors, shelves, counters and back shops.

(Second Visit.)—One dairy was found to be in good shape. Of 7 groceries, 6 were good and 1 fair. Notice was given to cover confectionery. Eight meat markets and 5 drug stores were found in good shape. The bakery and confectionery of F. G. Harlacher was in excellent shape. Two were fair and 1 good. Three slaughter-houses were visited, 2 being fair and 1 poor, due to the unclean surroundings. Of 8 hotels and restaurants, 7 were good and 1 fair.

MONROEVILLE, ALLEN COUNTY—

Three groceries and 2 drug stores were inspected and found to be in good condition. Of 3 meat markets visited, 1 was found good, 1 fair and

1 poor, being unclean. Of 3 hotels and restaurants inspected, 2 were good and 1 fair. Two bakeries and candy shops were visited and found in fair condition. Seventy-five pounds of meat were condemned.

MONTGOMERY, DAVIESS COUNTY—

Of 8 groceries inspected, 7 were good and 1 was fair. Two meat markets, 1 drug store, and 1 restaurant were found in good shape. One slaughter-house was condemned, being in a bad condition. Seventy-six cans of baking powder, 15 cans of meat and 5 bottles of catsup were condemned.

MONTPELIER, BLACKFORD COUNTY—

Sixteen inspections were made. Of 5 groceries inspected, 1 was in good shape and 4 were fairly clean. Five meat markets and slaughter-houses were found to be in fair condition. Two drug stores were in good shape. One bakery was fair. Of two restaurants, 1 was in good shape and 1 was fairly clean.

MOORESVILLE, MORGAN COUNTY—

Eleven inspections were made. Three groceries and 2 meat markets were in fair condition. Notice was given to clean things up and cover dried fruits and put away prepared meats. Three drug stores were visited, 1 being good, 1 fair and 1 poor. The store was unclean, poorly lighted and ventilated. One confectionery was found fair and the bakery owned by Lina Taggart was excellent. One restaurant was found to be in good shape. Four dozen quarts of apple butter were condemned. Ten dairies were inspected and 4 were found good, 3 fair, 1 poor and 2 bad, being condemned and closed.

MORRISTOWN, SHELBY COUNTY—

Four groceries, 2 meat markets, 1 slaughter-house, and 2 restaurants were in a fair condition. Notice was given to put cheese in case and fruits and other goods under cover. Two drug stores were visited, 1 being good and 1 fair. Forty-five bottles of vanilla extract were condemned. Two dairies were visited, and 1 was found fair and 1 poor. Ten days were given to put in windows and build partition separating the horses from the cows. The place was closed until these orders were complied with.

MT. VERNON, POSEY COUNTY—

Two restaurants were inspected and 1 was found poor and 1 bad, both being unclean. In one of the restaurants there was a barber shop in the same room. The place was condemned. Fourteen third inspections were made. Three groceries were found good and 1 fair. Three meat markets and 3 drug stores were visited and found to be in good condition. One bakery and confectionery was found good and 1 confectionery was found fair. Two restaurants were visited, and 1 was found in fair shape and 1 poor, being poorly lighted and ventilated.

MUNCIE, DELAWARE COUNTY (First Visit)—

Of 22 dairies inspected, 1 was found good, 11 fair, 9 poor and 1 bad. Several of the dairies needed new floors and a general clean up. Sixteen groceries were visited, 10 being in good shape and 6 fair. Goods were

ordered under cases. Of 12 meat markets inspected, 7 were good and 5 fair. Of 11 drug stores inspected, 10 were good and 1 fair. Nine bakeries and confectioneries were visited, 8 being good and 1 fair. Of 6 hotels and restaurants inspected, 2 were good, 3 fair and 1 poor; the goods were not under cases and the kitchen has very poor ventilation.

(Second Visit.)—Thirteen dairies were inspected. One was found good, 3 fair, 6 poor, and 3 bad, being unclean, poorly lighted and ventilated. Two ice cream factories were inspected, and found in good condition.

NEW ALBANY, FLOYD COUNTY (First Visit)—

Four dairies were inspected, 3 being good and 1 fair. Nine third inspections were made. One grocery was inspected and found in a poor condition. Five days were given in which to clean up the store. Eight meat markets were found in good condition. Of 19 drug stores inspected, 17 were good and 2 fair.

(Second Visit.)—Thirty-two groceries were inspected, 16 being good and 16 fair; 17 meat markets, 11 good and 6 fair; 6 drug stores were in good shape. Of 7 bakeries and confectioneries, 4 were good and 3 fair. One slaughter-house was found in fair shape. Of 3 hotels and restaurants, 2 were fair and 1 poor, the walls, ceilings and refrigerators being unclean. One hundred and fifty-four cans of meat, 373 cans of baking powder, 157 bottles of extract and 19 cans of beans were condemned. One hundred and fourteen second inspections were made. Of 45 groceries visited, the groceries owned by Augustus Oetken and R. L. Grosheider were in excellent shape. Twenty-four were good, 18 fair and 1 poor, being unclean. Of the 32 meat markets visited, 24 were good, 7 fair and 1 poor, being unclean. Of 12 drug stores visited, 8 were good, 1 fair and 1 poor. The drug stores belonging to Bruno Knoefel and C. B. Dorsey were found in excellent condition. Eight bakeries and confectioneries were inspected, 6 being good, 1 fair, and the Stein bakery was excellent. Of 8 slaughter-houses, 4 were good and 4 fair. One brewery was found fair. Of four hotels and restaurants, 2 were good and 2 fair. Three hundred and twenty-four cans of meat, 17 cans of codfish, 547 cans of baking powder, 52 packages of currants, 128 bottles of extract, 51 bottles of catsup, and 60 pounds of spice were condemned on second inspection.

NEWBERRY, GREENE COUNTY (First Visit)—

Of 3 groceries inspected, 1 was found good, 1 fair and 1 poor, the store being unclean, poorly lighted and ventilated. One meat market was found to be in good shape. One drug store and 2 restaurants were in fair condition, the shelves, counters and tables being unclean.

(Second Visit.)—Of 3 groceries inspected, 1 was found good, 1 fair and 1 poor, being unclean and not ventilated. Notice was given to cover dried fruits. One meat market and 1 drug store were found in good condition. Two hotels and restaurants were found to be fair.

NEWBURG, WARRICK COUNTY—

Two drug stores were inspected and found to be in good condition. One slaughter-house was found in poor condition, the place was condemned. Eight second inspections were made. Of 4 groceries inspected, 3 were

found good and 1 fair. The meat market owned by Otto A. Britzius was in excellent condition. Of 2 bakeries and confectioneries inspected, 1 was found good and 1 fair. One restaurant was found in good condition.

NEW CASTLE, HENRY COUNTY—

Three dairies were found in poor condition, being unsanitary. Eight groceries were found good and 2 fair. Four meat markets were rated good and 1 fair. Two fish markets were rated good. Of 6 drug stores visited, 5 were in good shape, and 1 fair. One slaughter-house was rated good and 1 fair. Of 6 bakeries and candy shops visited, 1 was found good and 5 fair. One ice cream factory was found good and 1 fair. Of 4 hotels and restaurants visited, 2 were found good and 2 fair. Eight bottles of maple syrup and 10 pounds of meat were condemned.

NEW HARMONY, POSEY COUNTY—

Three drug stores were inspected and found to be in good condition. Two slaughter-houses were visited, and 1 was found to be in fair condition and 1 poor, being unclean. Five second inspections were made. Two groceries, 2 meat markets and 1 bakery were visited, and found to be in good condition.

NEW PALESTINE, HANCOCK COUNTY (First Visit)—

Three groceries, 2 meat markets, 1 confectionery, 1 bakery and 1 restaurant were visited and found to be in fair shape. One drug store was found in good condition.

(Second Visit.)—Two groceries and 1 drug store were visited and found in good condition. Two meat markets and 1 bottling works were visited and found in fair shape. Of 3 bakeries and confectioneries inspected, 1 was found good and 2 fair. One calf's head and 10 pounds of meat were condemned.

NOBLESVILLE, HAMILTON COUNTY (First Visit)—

Thirteen first and 14 second inspections were made. Of 3 groceries visited, 1 was good and 2 were fair. Of 5 meat markets and slaughter-houses inspected, 2 were in good shape, 1 was fair and 2 were poor; 1 slaughter-house was in a bad condition and 1 was condemned. Of 3 bakeries and confectioneries, 1 was good and 2 were fair, the light and ventilation were not satisfactory and the goods were not properly handled. Two restaurants were in fair condition, the garbage was not removed daily and the walls and ceilings in one restaurant were unclean.

(Second Visit.)—Of 4 dairies inspected, 3 were found good and 1 fair. Two slaughter-houses and 2 ice cream factories were visited and found in fair condition. Three meat markets were in good condition. Five drug stores were inspected and found to be in good condition.

NORTH GROVE, MIAMI COUNTY—

Two groceries were inspected and found in fair condition. One restaurant and 1 drug store were visited and found to be in poor shape, being unclean. One creamery was found in fair condition.

NORTH JUDSON, STARKE COUNTY—

Ten inspections were made. Of 4 groceries visited, 3 were found good and 1 fair. One meat market and 2 drug stores were found to be good.

One bakery was inspected and found to be in a poor condition, the bake shop and walls and ceiling being unclean. Two hotels were found to be in fair condition.

A later visit shows 1 meat market, 1 drug store and 1 bakery and confectionery in a fair condition.

NORTH MANCHESTER, WABASH COUNTY (First Visit)—

Two groceries were inspected and found in good condition, and 2 were found fair. One meat market was found good and 1 fair. One bakery was found in a fair condition. Of 3 restaurants inspected, 1 was found good and 2 fair. One drug store was found good, and 1 owned by George Burdge was in excellent condition.

(Second Visit.)—Of 3 groceries inspected, 1 was good and 2 fair. Of 2 meat markets, 1 was good and 1 fair. Of 4 drug stores, 2 were good, 1 fair, and 1 bad, owing to the unclean surroundings. One bakery was in good shape. Of 3 hotels and restaurants all were good. One slaughter-house was in fair condition.

NORTH VERNON, JENNINGS COUNTY—

Two groceries were visited and rated fair. One confectionery and 1 poultry house were visited and rated good. One restaurant was rated good, and the hotel owned by Jay Cooke was rated excellent. Twenty-four second inspections were made. Seven groceries were found good, 2 fair, and the grocery owned by C. S. Crocker was found to be in excellent condition. Three meat markets were found in good shape and 1 in fair shape. Two slaughter-houses were found fair and 1 good. One drug store and 2 bakeries and confectioneries were visited, and found in good condition. One creamery and 3 hotels and restaurants were inspected and found to be in good condition. Six third inspections of drug stores were made, 5 rating good and 1 bad, being not much but an old curiosity shop.

OAKLAND CITY, GIBSON COUNTY—

One grocery and 1 slaughter-house were inspected and found in good condition. One restaurant was inspected and found in a poor condition, being poorly ventilated and lighted, unclean, and having untidy employees. Twenty second inspections were made. Five groceries, 2 meat markets, 4 drug stores, were inspected, and all found to be in good condition. Two poultry houses were inspected, and 1 was found good and 1 poor. Two slaughter-houses were found fair. One bakery was found fair and 1 confectionery poor. Two restaurants were found good and 1 fair.

ODON, DAVIESS COUNTY—

Eighteen first inspections were made. Of 8 groceries inspected, 2 were found good, 5 fair and 1 poor, the walls, ceilings, shelves and counters being unclean. Of 3 meat markets inspected, 2 were good and 1 fair. Of 4 drug stores visited, 2 were found good, 1 fair and 1 poor. The walls, ceilings and back shop being unclean. One bakery was inspected and found in poor shape. Notice was given to clean up at once. Two restaurants were visited, and 1 was closed until made clean, and 1 was condemned until made sanitary. Two dozen cans of sweet potatoes were condemned. Second inspections were made on 2 drug stores, 1 being good and 1 fair, the store being unclean and poorly lighted and ventilated.

OOLITIC, LAWRENCE COUNTY—

Of 5 groceries inspected, 3 were found good and 2 fair. Of 3 meat markets visited, 2 were good and 1 poor, the floor and back room of shop being unclean. One drug store was found in fair shape, the prescription counter being unclean. Of 6 hotels and restaurants inspected, 1 was good, 3 fair and 2 poor, being condemned until made clean and sanitary. Thirteen cans of baking powder, 88 cans of meat, 10 cans of fruit, and 8 bottles of extract were condemned.

ORLEANS, ORANGE COUNTY—

One grocery and 2 hotels and restaurants were found to be in good shape. Nineteen cans of meat and 6 cans of baking powder were condemned. Sixteen second inspections were made. Of 4 groceries inspected, 3 were good, and the 1 owned by Hollwell Bros. was in excellent condition. Two drug stores were good. One slaughter-house was good. Of 3 hotels and restaurants, 2 were good and 1 fair. Two ice cream parlors were visited, 1 being good and 1 fair. Eighteen cans of baking powder and 5 bottles of extract were condemned.

OSGOOD, RIPLEY COUNTY—

One creamery and 2 groceries were inspected and found in good condition. Twelve second inspections were made. The dairy owned by W. D. Wilson was found to be in excellent condition. Of 3 groceries inspected, 1 was found good, 1 fair, and the one owned by McCoy & Bovard was in excellent condition. Two slaughter-houses were rated fair. Two meat markets, 2 drug stores, 1 bakery and confectionery and 1 restaurant were all found to be in good condition. On the third inspection, 1 drug store was visited and found to be in good condition.

ORESTES, MADISON COUNTY—

Four groceries, 1 fish market and 1 drug store were inspected and were found to be in a fair state of cleanliness. The fish market was not well lighted or ventilated and had an unclean back shop.

OWENSVILLE, GIBSON COUNTY—

Two groceries were visited, and found to be in good condition. Seven second inspections were made. Two groceries and 2 meat markets were in good shape. Of 3 restaurants visited, 1 was good, 1 fair and 1 poor. The restaurant was condemned.

PAOLI, ORANGE COUNTY—

One dairy was in fair condition, improvements are under way which will put this dairy in good condition. One poultry house was in good shape. One slaughter-house was in poor condition, the killing floor was not clean. Nineteen second inspections were made. Of 7 groceries inspected, L. H. Buskirk & Brother's grocery was found to be in excellent condition, 3 were in good shape and 2 were fair. Twenty-six cans of meat were condemned. Two meat markets and 1 poultry house were found to be in fair condition. One creamery was in good condition. Three drug

stores were in good condition. Of five hotels and restaurants inspected, 4 were found to be in good shape and 1 was fair.

On a later inspection the meat market was good and a splendid new slaughter-house had been erected.

PEKIN, WASHINGTON COUNTY—

One creamery was inspected and found in good condition.

PENDLETON, MADISON COUNTY—

Five groceries were inspected, 3 were good and 2 were fair. One meat market and 1 fish market were in fair shape. One drug store was in good shape. Two candy shops were good and fair, 1 cellar was not clean and tidy. Of 3 restaurants inspected, 1 was in good condition and 2 were fair. Later 1 dairy was visited and found in poor condition. Notice was given to put in six more windows, close up milk house entrance, build vestibule and clean up generally.

PERU, MIAMI COUNTY (First Inspection)—

Twenty-three first inspections were made. Of 11 groceries visited, 7 were found good and 4 fair. Of 7 meat markets inspected, 5 were good and 2 fair. Four drug stores were inspected, 2 being good and 1 fair. The drug store owned by R. E. Murphy was in excellent condition. One confectionery was found in good shape. Twenty pounds of sausage and sixty-five pounds of pork loins were condemned. Seven second inspections were made. The grocery and meat market owned by McCaffery & Co. was in excellent condition. One grocery and meat market was found good and one grocery and meat market fair. The Chickasaw Pharmacy Co. was in excellent condition.

(Second Inspection.)—Of 9 dairies visited, 4 were found good, 3 fair and 2 poor. Of 8 groceries visited, 5 were found good and 3 fair. Of 9 meat markets inspected, 5 were found good and 4 fair. Three slaughter-houses were found fair and 1 poor. Two drug stores, 1 canning factory and 2 confectioneries were rated good. One hotel was inspected and found in a poor shape, the walls, ceiling and refrigerator being unclean. Fifty pounds of meat were condemned.

PETERSBURG, PIKE COUNTY—

One drug store was found in good condition. One restaurant was found fair. Seventeen second inspections were made. Of 6 groceries inspected, 4 were found good, 1 fair, and the grocery owned by J. H. Vliehe & Co. was found in excellent condition. One meat market, 1 poultry house and 2 restaurants were visited and found in fair condition. Of 4 drug stores visited, 3 were found good and 1 fair. Two bakeries and confectioneries were found to be in good condition and 1 fair.

PLAINFIELD, HENDRICKS COUNTY—

Eight dairies were inspected, and 2 were found fair, 4 poor and 2 bad, being condemned until made sanitary.

PLAINVILLE, DAVIESS COUNTY—

One drug store was inspected and found to be in a poor condition, the floors, walls and ceilings and prescription counter being unclean.

PLYMOUTH, MARSHALL COUNTY—

Two groceries were inspected and found to be in a good condition. Two drug stores were inspected, one being good and the one owned by Charles Reynolds was in excellent shape. Two meat markets were found fair. One bakery and confectionery was found good and 1 confectionery was found fair. One canning factory was found in a poor condition. Three drug stores, 2 restaurants and 1 hotel were inspected and found in good condition. Forty-five pounds of meat were condemned.

PORTLAND, JAY COUNTY (First Visit)—

Thirty-seven inspections were made. Of 3 dairies visited, 1 was found to be in fair condition and 2 were in poor shape; new floors and ceilings were ordered. Seven groceries visited were in fair condition. Dried fruits, cakes, etc., were ordered to be placed under cover. Of 11 meat markets and slaughter-houses inspected, 9 were fair and 2 slaughter-houses were poor and were condemned. A separate room was ordered for hides and rendering. One slaughter-house had a good cement floor, but the building was dilapidated. Of 5 drug stores inspected, 3 were good and 2 were fair. Three bakeries and 8 hotels and restaurants were found to be in a fair state of cleanliness.

(Second Visit.)—Of 3 dairies visited, 1 was found good, 1 fair and 1 poor, being unclean. Of 6 groceries inspected, 5 were found good and 1 fair. Five meat markets, 3 slaughter-houses, 4 drug stores, 3 bakeries and confectioneries, and 3 restaurants were visited and found to be in good condition.

POSEYVILLE, POSEY COUNTY—

One grocery and 1 drug store were visited and found in good shape. Two second inspections were made. One grocery and 1 meat market were found to be in good condition.

PRINCETON, GIBSON COUNTY—

Five drug stores were visited and found to be in good shape. Three second inspections were made of groceries and all were found to be good.

RENSSELAER, JASPER COUNTY—

Of 4 groceries visited, 3 were found good and 1 fair. Two meat markets were found in good shape. Two slaughter-houses, 1 chicken house and 1 ice cream factory were found in fair condition. Of 3 drug stores inspected, 2 were found good and 1 fair. Of 5 bakeries and confectioneries inspected, 2 were found good and 3 fair. Of 6 hotels and restaurants visited, 5 were found good and 1 fair.

RICHMOND, WAYNE COUNTY (First Visit)—

Fourteen dairies were inspected, 4 being in good condition, 7 fair and 3 poor, being unclean.

(Second Visit.)—Six groceries and 6 meat markets were found in fair condition. Of 9 drug stores visited 7 were good and 2 fair. Ten bakeries and confectioneries, 7 hotels and restaurants were found in fair shape.

(Third Visit.)—On the first inspection 50 dairies were visited, 10 of which were found good, 26 fair, 9 poor and 5 bad, being unsanitary. Nineteen dairies were inspected on the second visit, 4 being found good, 10 fair and 5 poor.

REDKEY, JAY COUNTY—

Seventeen inspections were made. One dairy visited was found to be in fair condition, a new barn is being built. Six groceries were found to be in fair condition. One ceiling was ordered to be repaired. Of 4 meat markets and slaughter-houses 1 was fair, 2 were in poor condition and 1 was in bad shape. Two slaughter-houses were condemned. One meat market did not have a clean back shop and 1 had a bad ceiling, and orders were given to repair same. Of 2 drug stores inspected, 1 was in good shape and 1 was fair. One bakery, 1 confectionery and 2 restaurants were found to be in fair condition. Orders were given to clean refrigerator and fix the ceiling.

RIDGEVILLE, RANDOLPH COUNTY—

Eight groceries, 2 meat markets, 2 bakeries and confectioneries, and 3 hotels and restaurants were inspected and found to be in fair condition. Of 3 drug stores visited, 2 were found good and 1 fair.

RISING SUN, OHIO COUNTY—

Of 6 groceries visited. 2 were found good and 1 fair, and those owned by Whittock & Cooper, R. D. Fisher and Henry & Anderson were found to be in excellent condition. One canning factory, 2 meat markets, 2 drug stores and 1 ice plant were inspected and found in good condition. Of 4 bakeries and confectioneries visited. 1 was found good and 3 fair. One restaurant was found fair and 1 poor, the walls and ceiling being unclean. One hotel was inspected and found good. One slaughter-house was found good and 1 fair.

ROANN, WABASH COUNTY—

One grocery and 2 meat markets were visited and found to be in fair shape. One drug store was found good, 1 bakery and confectionery fair, 1 slaughter-house poor because of unclean surroundings. Two hotels and restaurants were in good shape.

ROCHESTER, FULTON COUNTY (First Visit)—

Of 10 groceries inspected, 9 were found good and 1 fair. Of 5 meat markets visited, 4 were found good, and the grocery owned by L. P. Connor was found to be in excellent condition. One drug store was found fair, 1 good, and the stores owned by A. Ruh and George V. Dawson were found to be in excellent condition. Two bakeries were visited, 1 being fair and 1 poor, the bakeroom being unclean. Of 6 restaurants visited, 2 were found good, 3 fair and 1 poor, the soda fountain being dirty.

(Second Visit.)—Seven groceries, 2 meat markets and 1 fish market were in good condition. Four drug stores were visited, 2 being good, and the store owned by Alex Ruh was in excellent shape. Three bakeries and confectioneries were in good condition. Of 5 hotels and restaurants, 3 were good, 1 fair, and the one owned by O. Karno & Co. was excellent.

ROCKFIELD, CARROLL COUNTY—

Of 5 groceries inspected, 3 were fair, 1 poor and 1 bad, which was closed until made sanitary. One meat market and 1 restaurant were found to be in good condition. Two drug stores were inspected, 1 being good and 1 poor, as it was very unclean. Three and one-half pounds of cheese was condemned.

ROCKPORT, SPENCER COUNTY—

Three drug stores were visited and found to be in good shape. Three second inspections were made. The grocery owned by J. H. Walker was in excellent condition. J. J. Wetzel & Co.'s bakery and confectionery was in excellent condition.

ROCKVILLE, PARKE COUNTY—

Of 2 groceries visited, 1 was found good and 1 bad, being very unclean. The grocery was closed until made sanitary. One meat market and 1 slaughter-house were visited, and found to be in fair shape. Two drug stores were found good. Two restaurants were inspected and found in very unsanitary condition. One restaurant was closed until it could be cleaned up.

RUSHVILLE, RUSH COUNTY (First Visit)—

Eight first and 6 second inspections were made. Three groceries, 1 meat market, 1 drug store, and 2 restaurants were found to be in good condition. The Greek Candy Store was found to be in good condition. Of the second inspections made 4 were found to be in good condition. The drug store owned by T. W. Lytte and the grocery owned by L. L. Allen were found to be in excellent condition.

(Second Visit.)—Of 8 groceries inspected, 2 were found good and 6 fair. Cheese, crackers and other goods were ordered put under cases. Of 5 meat markets visited, 1 was found good, 3 fair and 1 poor, being unclean. Three slaughter-houses were inspected, 2 being fair and 1 poor, the general conditions being unclean. Four drug stores were found to be in good condition. Of 6 bakeries and confectioneries inspected, 2 were found good and 4 fair. One ice cream factory was found fair. Three restaurants were found to be in fair shape. Notice was given to cover pies and meats. Four drug stores were inspected—3 good and 1 fair.

SANDBORN, KNOX COUNTY—

Two groceries and 1 drug store were visited and found to be in good condition. Of 3 hotels and restaurants inspected, 2 were fair and 1 poor, being unclean.

SANTA FE, MIAMI COUNTY—

Two groceries were inspected, and 1 was found good and 1 fair. One meat market and 1 slaughter-house were visited and found in fair condition.

SALEM, WASHINGTON COUNTY—

Two bakeries and confectioneries were inspected and found to be in good condition. One slaughter-house was fair only. Of 2 hotels visited, 1 was good and 1 fair. Twenty-four second inspections were made. The 1 dairy visited was found in fair shape. Of 9 groceries, 6 were good and 1 fair. The groceries belonging to S. P. Morris and Guy Neal were excellent. The meat market also owned by S. P. Morris was excellent. Two markets were found in good condition; 4 drug stores good. Of 2 bakeries and confectioneries, 1 was good and 1 fair. Of 5 hotels and restaurants, 3 were

good, 1 fair and 1 poor, being badly lighted and ventilated; of 2 ice cream parlors, 1 was good and 1 fair. Seventy-six cans of meat, 131 cans of baking powder, 8 bottles of extract, 12 bottles of catsup and 6 quarts of maple syrup were condemned.

SCOTTSBURG, SCOTT COUNTY—

Two groceries were found to be in good condition, and the grocery owned by the Everett Bros. was in excellent condition. Two meat markets and 1 confectionery were found in good condition. One slaughter-house was rated fair. One hotel was found in good shape and 1 restaurant was found poor, being very untidy. Fifteen second inspections were made. Of 5 groceries inspected, 3 were found good, 1 fair and 1 poor, the walls, ceilings, shelves and counters being unclean. One meat market was found good and 1 poor. One slaughter-house and 1 restaurant were found to be in fair condition. One bakery and confectionery was found poor, as the goods were not placed in covered cases. Three drug stores, 1 canning factory, and 1 ice cream factory were inspected and found in good condition.

SEELYVILLE, VIGO COUNTY—

Six dairies were inspected and found in fair condition. Notice was given to clean and fix up dairies.

SEYMOUR, JACKSON COUNTY—

One slaughter-house and 1 dairy were visited and found in fair condition. One bakery was found in good shape. Four third inspections were made. One drug store was found in good condition. One slaughter-house was found good, 1 fair and 1 poor. Five drug stores were found good.

SELLERSBURG, CLARK COUNTY—

Two groceries were found to be in fair shape, as the goods were kept in an untidy manner. Nine second inspections were made. One grocery, 2 meat markets and 1 drug store were visited, and found in good shape. Two slaughter-houses, 1 hotel and 1 restaurant were visited, and found to be in fair condition. Notice was given to clean up at once. One canning factory was found poor.

SHELBYVILLE, SHELBY COUNTY—

Six groceries, 5 bakeries and confectioneries, 4 hotels and restaurants and 3 slaughter-houses were visited, and found to be in fair shape. Of 4 meat markets, 1 was good and 3 fair; of 7 drug stores, 4 were good and 3 fair.

SHOALS, MARTIN COUNTY—

Two groceries were inspected, 1 being in a fair condition, and the one owned by Johnson & Chenoweth was excellent. One slaughter-house was found in fair shape. One hundred fifty cans of baking powder were condemned. Thirteen second inspections were made. Of 8 groceries inspected, 6 were found to be good and 2 fair. One meat market was in fair shape. Of 2 drug stores visited, 1 was good and 1 fair. Of 2 restaurants visited, 1 was fair and 1 poor, notice being given to clean up at once. Forty-three bottles of extract and 6 cans of meat were condemned.

SHERIDAN, HAMILTON COUNTY—

Two drug stores were found to be in good condition. The drug store owned by C. E. Elliott was found to be excellent. One bakery was visited and found in good shape. One restaurant was found good and 1 fair.

SILVER LAKE, KOSCIUSKO COUNTY—

The grocery owned by Marsh & Hively was found to be in excellent condition. Two groceries were found good and 1 fair. One meat market and 2 bakeries were visited and found in fair shape. The drug store owned by H. P. Rager was found to be in excellent condition. One drug store and 1 hotel and restaurant were visited, and found in good shape. Two bakeries were found in fair shape.

SPENCER, OWEN COUNTY (First Visit)—

Thirty-one inspections were made. One creamery was in good condition, and 1 dairy was in fair condition. Notice was given to clean up premises, partition and use cooler. Ten groceries were inspected. Two were in good condition, 4 fair and 4 poor. Seven were unclean and 3 had foul refrigerators. Thirteen dozen cans of meats, syrups, etc., were condemned. Of 5 meat markets and slaughter-houses inspected, 3 were fair, 1 was poor and 1 was bad. Two had foul refrigerators and 5 were unclean. There were 3 drug stores inspected. The one owned by Wm. Moss & Co. was found to be in excellent shape. Two were fair. Notice was given to put their drug stores in a sanitary condition. Of 5 bakeries and confectioneries inspected, 1 was good, 3 were fair and 1 was bad. Notice was given to clean up bake shop and paint woodwork. Six restaurants were inspected, 1 was good, 3 were fair, 1 was poor and 1 was bad. Five were unclean, 3 had foul refrigerators and 1 was not well lighted and well ventilated. One restaurant was ordered to be closed until made sanitary.

(Second Visit.)—Of 4 drug stores inspected, 3 were found good and 1 fair. L. A. Warner's restaurant was in excellent shape. Twenty-one second inspections were made. Four groceries were found in fair condition. Of 5 meat markets inspected, 4 were good and 1 fair. Notice was given to keep floors and counters clean. Four drug stores were visited, 1 being good and 1 fair. The stores owned by Lous Schmidt and Wm. Moss were in excellent condition. Of 2 bakeries and confectioneries visited, 1 was found good and 1 fair. Of 6 hotels and restaurants inspected, 3 were in good condition and 3 fair.

(Third Visit.)—Of 3 groceries inspected, 2 were found poor and 1 bad, being very unclean. One meat market was found good and 1 poor. One bakery was found to be fair and 1 confectionery was found fair. Of 5 restaurants visited, 1 was found good, 3 fair and 1 poor, being very unclean.

SPICELAND, HENRY COUNTY—

One grocery was found good, and 3 fair. Two meat markets were rated fair, the refrigerators being foul. Two slaughter-houses were found in fair condition. One restaurant was found in good condition. Seventy-six bottles of extract and 3 one-half-gallon bottles pickles were condemned.

STEWARTSVILLE, POSEY COUNTY—

Two groceries were inspected and found in good condition.

SULLIVAN, SULLIVAN COUNTY (First Visit)—

Nine first and 16 second inspections were made. Of 2 groceries inspected, 1 was good and 1 was fair. One meat market was in good condition. Notice was given to keep meats covered and in from front of store. The depot confectionery was found to be in excellent condition. Of 5 hotels and restaurants, 3 were good and 2 were poor. Four were unclean and 1 had a foul refrigerator. Notice was given to paint and put things in a sanitary condition at once. Of the second inspections made, 7 were good, 6 were fair and 3 were poor. Nine of the places inspected were unclean, and 12 pounds of meat were condemned.

(Second Visit.)—One first inspection was made of a restaurant, which was in fair shape. The shelves, tables and sinks were unclean. Thirteen second inspections were made. Of 4 groceries visited, 1 was found good and 1 fair. Notice was given to cover dried fruits and put confectionery in case. The groceries owned by H. E. Dutton and Roy Cowles were in excellent condition. One meat market and 2 drug stores were found in good shape. Anderson's confectionery was in excellent shape. Of 5 hotels and restaurants inspected, 2 were found good, 1 fair, 1 poor and 1 bad. Notice was given to cover ples and other foodstuffs and clean up at once. One dozen bottles of pickles were condemned.

(Third Visit.)—Six first inspections were made. Of 2 groceries visited, 1 was found good and 1 fair. Notice was given to clean floors and back yards. One drug store and 1 confectionery were found in good shape. Two hotels and restaurants were visited, 1 being good and 1 fair. Notice was given to clean floors and back yards. One second inspection was made of a meat market, which was in good condition.

SWITZ CITY, GREENE COUNTY (First Visit)—

One grocery and 1 meat market were inspected and found to be in fair condition. Notice was given to clean up store at once. Four second inspections were made. Of 3 groceries visited, 2 were found fair and 1 poor, on account of unclean conditions. One drug store was found in a poor condition. Notice was given to clean up store throughout.

(Second Visit.)—One grocery and 1 meat market were inspected, and found to be in fair condition. Notice was given to clean up store at once. Four second inspections were made. Two groceries were found fair. One drug store was visited and found in a poor condition. Notice was given to clean store throughout. One restaurant was inspected and found in poor shape. Notice was given to clean up thoroughly and cover prepared foodstuffs. One third inspection was made of a grocery, which was found to be in a very unclean condition. Notice was given to clean thoroughly and to keep clean.

SUMMITVILLE, MADISON COUNTY—

Four groceries, 3 meat markets, 2 drug stores and 1 restaurant were visited and found to be in good shape. Two bakeries were inspected and found in fair shape.

SWAYZEE, GRANT COUNTY—

Two groceries were inspected and found in a good and a fair condition. One meat market, 3 drug stores, 2 confectioneries, and 1 bakery were visited and found in good condition. Of 2 restaurants inspected, 1 was found good and 1 fair

SYRACUSE, KOSCIUSKO COUNTY—

Three groceries were found in good condition. One meat market and 1 hotel and restaurant were visited, and found in fair condition. Two drug stores were visited, 1 being found good and 1 fair.

TELL CITY, PERRY COUNTY—

Three drug stores were inspected and found to be in good condition. Seven second inspections were made. The groceries owned by Schrieber & Son and Becker Bros. were found to be in excellent condition. Two meat markets were visited and found to be good. Two bakeries and confectioneries were visited and found in good condition. The pretzel factory owned by Adolph Gloove was found to be excellent.

TERRE HAUTE, VIGO COUNTY (First Visit)—

Three hundred and thirty-nine first inspections were made. Of 61 dairies visited, 7 were good and 26 fair, 17 were found poor and 11 bad, on account of unclean conditions. Of 110 groceries visited, 25 were found good, 66 fair, 15 poor and 4 bad. One packing plant was found good. Of 66 meat markets inspected, 13 were good, 40 fair, 11 poor and 2 bad, having very unclean conditions. Three slaughter-houses were inspected, 1 being fair and 2 poor. Notice was given to clean up at once. Of 21 drug stores inspected, Madison's Oak Hall Pharmacal Co., and J. O. Buntin's drug stores were in excellent condition. Ten were good, 8 fair and 1 poor. Notice was given to clean store. Of 41 bakeries and confectioneries inspected, the ones owned by W. H. Sage's Sons, Mokely & Harkness and Peter Georgepoulos were in excellent condition. Seventeen were good, 18 fair, 2 poor and 1 bad. Notice was given to close shop until cleaned up. Of 31 hotels and restaurants inspected, 12 were good, 11 fair, 4 poor and 2 bad, the places being poorly lighted and ventilated and very unclean. The restaurants owned by Jerry Fitzgerald and Smith & Williams were in excellent condition. Three ice cream factories were visited, 1 being good, 1 fair and 1 poor. Two fish markets were inspected, 1 being good and 1 fair. One milk depot was in fair shape. Two cows and seven hundred fifty (750) pounds of meat were condemned. Thirty-eight second inspections were made. Of 32 dairies inspected, 15 were found good, 15 fair, and 1 poor. One dairy was in such an unclean condition that it was condemned until made sanitary. One grocery was in fair condition. Of 2 bakeries and confectioneries visited, 1 was found good and 1 fair. The drug stores owned by A. B. Austin, Joseph S. Madison, and the Bauer Pharmacy Co., were in excellent condition.

(Second Visit.)—Four hundred seventy-seven first inspections were made. Of 5 dairies visited, 1 was found good, 2 fair and 1 bad, being in a very unclean and unsanitary condition. The dairy owned by U. F. Shalter was in excellent condition. Two hundred eleven groceries were inspected, and 129 were found to be good, 64 fair, 7 poor, being unclean. The groceries owned by J. L. Hance, P. M. Calhoon, T. W. Evinge & Son, "Buff" Kaufman, J. C. Frelscon, George Burget, F. E. O. Meissel, F. E. Jaques & Son, W. H. Morris, Wright & King, and William Holdaway were inspected, and found in excellent condition. Of 125 meat markets inspected, 79 were found good, 37 fair, 3 poor, and the markets belonging to F. E. Jaques &

Son, W. H. Morris, Wright & King, William Holdaway, Ehrman & Co., and Carl Latze, were found to be in excellent condition. One slaughter-house was condemned until made sanitary. Of 50 drug stores inspected, 42 were found good and 8 excellent. The excellent ones are: The Buntin Drug Company, Oak Hall Pharmacy, Rose Pharmacy, Arthur Baur, A. B. Auston, Sim Wagner, and F. S. Campton. Of 26 bakeries and confectioneries inspected, 23 were found to be good, 2 fair and 1 poor, being unclean. Of 31 hotels and restaurants inspected, 18 were found to be good, 7 fair and 4 poor, being unclean. The restaurant owned by J. C. Kieth and the Northern Hotel and Cafe were inspected and found in excellent condition. Four ice cream parlors were visited, and 4 were found to be in good condition, and the one owned by E. S. Campbell & Co. was in excellent condition. Four ice cream factories were found in good shape. One lunch wagon and 1 cold storage plant were inspected, and found in fair condition. Of 18 fish markets inspected, 12 were found good and 4 fair. The fish markets owned by Hauck & Hager and P. M. Calhoun were inspected and found in excellent condition. Ten beeves were condemned. On the second inspection, 1 hotel and 1 restaurant were visited, and found in poor condition. Notice was given to clean up at once and keep clean.

(Third Visit.)—Of 11 groceries visited, 8 were found fair, 2 good and 1 poor; notice being given to cover goods and keep things clean. Of 9 meat markets, 8 were found fair and 1 poor, being unclean. Of 6 drug stores, 5 were good, and the one belonging to J. C. Buntin was excellent. Twelve bakeries and candy shops were visited. Those owned by A. B. Mewhinney, Bement Rea & Co. and Moxley & Hartness, were excellent. Six were found good, 2 fair and 1 poor, being unclean. One ice cream parlor was in fair shape. Of 5 wholesale liquor houses visited, 3 were fair and 2 good. Of 16 hotels and restaurants, 4 were found good, 8 fair, 3 poor and 1 bad; notice given to clean up and cover foodstuffs. Two hundred and eight pounds of meat were condemned.

TIPTON, TIPTON COUNTY (First Visit)—

Eleven first and sixteen second inspections were made. Of 4 groceries inspected, 1 was good and 3 were fair. Two drug stores were found in good condition. Of the 3 bakeries and candy shops, 1 was found unclean. Two restaurants were inspected in fair condition. Pies and meats were ordered to be kept under cases. Of the second inspections made, 6 were good and 10 were fair.

(Second Visit.)—Of two meat markets inspected, 1 was found fair and the one owned by Bunch & Bunch was in excellent condition. Four drug stores were found good and 1 fair. One bakery was found fair, and 1 hotel good.

THORNTOWN, BOONE COUNTY—

One creamery was found in fair condition. Of 9 groceries inspected, 5 were found good and 4 fair. The City meat store was in excellent condition. Two meat markets were found fair. One slaughter-house was visited and found in poor shape. Notice was given to clean up at once. Of 4 drug stores visited, 1 was good and 2 poor. One store was closed until made sanitary, and the other was notified to clean up at once. The store

owned by W. C. Burk was in excellent condition. Of 3 bakeries and confectioneries visited, 2 were good and 1 fair. Of 3 hotels and restaurants inspected, 1 was in good shape and 2 fair. Thirty packages of pickles were condemned. Two second inspections were made. One grocery was visited and found in good condition. One drug store was rated poor, being in a very unclean condition. Notice was given to clean up at once.

TUNNELTON, LAWRENCE COUNTY—

Three groceries were inspected, 2 being good and 1 poor, the shelves, counters and back room being unclean. One hundred thirty-two cans of baking powder were condemned.

UNION CITY, RANDOLPH COUNTY—

Six groceries, 2 meat markets, 3 bakeries and confectioneries and 1 restaurant were visited and found in a fair condition. Four drug stores were found good. Three slaughter-houses were visited; 2 were found fair and 1 poor, being unclean.

UPLAND, GRANT COUNTY—

Of 4 groceries inspected, 3 were found good and 1 fair. Three meat markets visited, 2 being good and 1 fair. Two drug stores, 1 bakery and 1 confectionery were visited and found in good shape. One slaughter-house was found in a fair condition. Orders were given to clean up, whitewash and repair the slaughter-house.

VAN BUREN, GRANT COUNTY—

Of 7 groceries inspected, 4 were good and 3 fair. Two meat markets and 2 drug stores were found in good shape. Two restaurants were in fair shape. Goods were ordered put under cases.

VALPARAISO, PORTER COUNTY—

Of 9 groceries visited, 5 were found good and 4 fair. Four meat markets and 4 drug stores were found good. Of 7 bakeries and confectioneries inspected, 5 were good and 2 fair. One hotel was found good.

VEEDERSBURG, FOUNTAIN COUNTY—

Eighteen inspections were made. Of 6 groceries visited, 5 were fair and 1 poor. Notice was given to clean up at once. Of 3 meat markets inspected, 2 were found fair and 1 poor. Notice was given to clean up and keep clean. Three drug stores were rated good. Of 3 bakeries and candy shops visited, 2 were fair and 1 poor. Word was left to whitewash and clean up back yard. Three hotels and restaurants were inspected, 2 being good and 1 fair.

VEVAY, SWITZERLAND COUNTY—

One creamery was found in good shape. Of 4 groceries visited, 1 was found good and 3 fair. One meat market was found fair and 1 good. Two slaughter-houses were rated poor, being very unclean. Two drug stores were found good. One confectionery was found good and 2 fair, and 1 bakery was found to be in a fair condition. One restaurant was found fair and 1 poor, being unclean.

VIENNA, SCOTT COUNTY—

Of 2 groceries inspected, 1 was found good and 1 fair.

VINCENNES, KNOX COUNTY (First Visit)—

Forty first inspections and 39 second inspections were made. Of the 5 dairies inspected, 2 were found good, 1 fair and 2 poor. The grocery of Lawrence A. Bey was found to be in excellent condition. Seven groceries were in good condition, and 7 fair. Seven meat markets were inspected, 2 being good and 1 in fair condition. The confectionery of Cassell & Son was inspected and found to be in excellent condition. Of the other 2 inspected, 1 was good and 1 fair. Five lunch cars and restaurants were inspected, 1 being fair and 4 poor. One creamery was inspected and found in good condition. One hundred and thirty boxes of baking powder, 174 cans meats, 40 bottles extract and 16 bottles catsup were condemned. Of the second inspections the following groceries were in excellent condition: Hall Bros., Bratton & Racy and John Huffman. Of the 5 meat markets inspected, 4 were good and 1 was fair. The drug store owned by Moore & Miller was in excellent condition. Four drug stores were found good and 2 in fair condition. Of the bakeries and candy shops inspected, 2 were found good and 2 fair. Of the 7 hotels and restaurants inspected, 4 were found good and 3 fair. One bottling works was found to be in good condition. Eighty-five cans of meat, 258 cans of baking powder, 204 bottles extract, 18 bottles catsup, 16 bottles of cream were condemned.

(Second Visit.)—Of 3 dairies inspected, 2 were found poor and 1 bad, being condemned until made sanitary. Three groceries, 1 drug store and 1 canning factory were inspected, and found to be in good condition. One slaughter-house, 1 poultry house and 2 restaurants were inspected, and found in fair condition. One bakery and confectionery was visited and found in fair shape, and the confectionery owned by the Zarafonetis Bros. was inspected and found to be in excellent condition. Cold storage plant owned by C. B. O'Donnel was inspected and found in excellent condition. Twenty-nine second inspections were made. Of 4 dairies inspected, 3 were found fair and 1 poor. One condensed milk company, and 2 slaughter-houses were inspected, and found in fair shape. Four meat markets and 3 bakeries and confectioneries were visited, and found in good condition. Of 8 groceries inspected, 6 were found good, 1 poor, and the grocery owned by L. A. Bey was found to be in excellent condition. Of 7 hotels and restaurants visited, 1 was found good and 7 fair. Thirty-two third inspections were made. Of 12 groceries inspected, 9 were found good, 1 fair and 2 excellent. The grocery and meat market owned by John Hoffman & Sons. and the grocery owned by Hall Bros., were found in excellent condition. Three meat markets were found good. Thirteen drug stores were rated good. The confectionery owned by W. W. Cassel was visited and found in excellent condition. Two bakeries and confectioneries were rated good. One restaurant was found good and 1 hotel fair.

WABASH, WABASH COUNTY—

Twenty-seven inspections were made. Of 13 groceries, 10 were good and 3 fair. Of 5 meat markets inspected, 4 were good and 1 fair. Of 5 drug stores visited, 4 were good and the store owned by the Bradley Bros.

was in excellent condition. One bakery was found to be good. Of 3 hotels and restaurants inspected, 2 were good and 1 fair.

WARREN, HUNTINGTON COUNTY—

Seven groceries, 2 meat markets, 1 slaughter-house, 1 bakery and 1 restaurant were visited and found in fair shape. Four drug stores were found to be good.

WASHINGTON, DAVIESS COUNTY—

One grocery was inspected and found to be in good condition. One bakery was inspected and found to be in good condition. One restaurant was inspected and found to be in fair condition, being poorly lighted and unclean. Of the second inspections, the following groceries were found excellent: H. F. Vollmer, John Dally, the Cabal-Kaufman Mercantile Co., and Neal & Erkstine. The confectionery owned by Charles Jones was found to be in excellent condition. Of twenty-eight inspections, 20 were reported good, and 4 fair. Twenty-nine cans baking powder and 77 cans meat were condemned. Ten drug stores were rated good.

WALTON, CASS COUNTY—

One creamery was found in good shape and 1 poor. The faucets were dirty with old milk, and the milk cans were not cleaned before they were returned to the farmers. Two groceries, 2 meat markets, 1 bakery and 1 hotel were visited, and all found to be in good condition.

WARSAW, KOSCIUSKO COUNTY (First Visit)—

One dairy and 8 groceries were inspected and found in good condition. Five meat markets and 5 drug stores were visited, and 4 were found to be in good condition, and 1 fair. Two slaughter-houses were inspected, 1 being fair and 1 bad, on account of the unclean conditions. One bottling works was found good. Of 4 bakeries and confectioneries visited, 2 were good and 2 fair. Of 8 hotels and restaurants visited, 7 were found good and 1 fair.

(Second Visit.)—Of 8 grocery stores visited, 7 were found good and 1 fair. Three meat markets and 1 drug store were visited, and found in good condition. One ice cream factory, 1 canning factory and 2 bakeries were visited, and found in fair shape. One second inspection was made of a hotel, which was found to be in good condition.

WAVELAND, MONTGOMERY COUNTY—

Of 7 grocery stores inspected, 1 was found good, 5 fair and 1 poor. Notice was given to clean up. Two meat markets and 2 drug stores were visited, and found in good condition. One restaurant was found in a fair condition. Notice was given to clean up and cover pies. One hotel was visited and found in bad condition. Notice was given to clean up kitchen and back yard, and to disinfect closets and clean up accumulation on ground.

WAWASEE, KOSCIUSKO COUNTY—

One restaurant and 1 hotel were inspected, and found in fair condition.

WEST BADEN, ORANGE COUNTY—

One grocery and 2 meat markets were visited and found to be in fair shape. Two hotels and restaurants were good. Forty-nine cans of baking powder were condemned. Nine second inspections were made. Of 2 groceries, 1 was found good and 1 fair. One meat market was fair. Of 2 drug stores, 1 was good and 1 fair. Four hotels and restaurants were found in good condition. Seven cans of meat, 3 bottles of extract and 3 cans of baking powder were condemned.

WESTFIELD, JASPER COUNTY—

One grocery store, 1 meat market and 2 drug stores were inspected, and found in fair condition. Two restaurants were inspected and found in good condition.

WHITELAND, JOHNSON COUNTY—

Of 20 dairies inspected, 1 was found good, 5 fair, 6 poor and 8 bad. Notices were given to clean up, put in concrete floors, screen milk house, put in windows, whitewash, and separate cows from horses. Several dairies were condemned until made sanitary. One canning factory was inspected, and found in good condition. On the second inspection, 3 dairies were visited, 1 being fair and 2 poor, which were condemned and closed until made sanitary.

WHITING, LAKE COUNTY—

One dairy was inspected and found to be fair, and 1 poor. Five milk depots were inspected. Four were found poor and 1 bad; the utensils used were dirty and the general conditions of the dairies were bad. One grocery, 1 meat market, and 1 confectionery were visited and found in poor condition, being very unclean.

WINAMAC, PULASKI COUNTY (First Visit)—

One grocery, 1 meat market, 1 restaurant and 1 bakery were inspected and found in good condition.

(Second Visit.)—Of 6 groceries visited, 3 were found good and 3 fair. Two meat markets were good. Of 3 drug stores, 2 were good and 1 fair. Of 2 hotels and restaurants, 1 was fair and 1 poor, being unclean and not well ventilated. Fifteen pounds of fish and 1 quart of oysters were condemned.

WINCHESTER, RANDOLPH COUNTY—

Of 12 groceries inspected, 1 was found good and 11 fair. Five meat markets were in fair shape. Two slaughter-houses were visited; 1 was fair and 1 bad, being unclean. Three drug stores were found in good shape. Of 6 bakeries and confectioneries visited, 1 was found good and 5 fair. Two restaurants were in fair condition. Goods were ordered put under cases.

WORTHINGTON, GREENE COUNTY (First Visit)—

One grocery was inspected and found to be in good condition. One restaurant was inspected and found to be in poor condition, being poorly lighted, not ventilated and unclean. Two second inspections were made, 1 being good and 1 poor.

(Second Visit.)—Of 3 groceries inspected, 1 was found good and the groceries owned by Geo. Baker and Cooper & Housford were excellent. Eight third inspections were made. Of 5 groceries visited the Baker Bros. grocery was found excellent; 1 was good, 2 fair, and 1 poor, being unclean. Of 3 meat markets visited, 2 were fair and 1 poor. Notice was given to clean up store, back yard and cellar.

(Third Visit.)—Three dairies were inspected, and 1 was found good and 2 fair. Of 9 groceries inspected, 4 were found good, 4 fair, and the grocery store owned by Cooper & Housford was found to be in excellent condition. One meat market was found good and 2 fair. Of 5 drug stores visited, 3 were found good, 1 fair, and the store owned by William Cook was in excellent condition. One bakery and 2 restaurants were inspected, and found to be in fair condition.

(Fourth Visit.)—Three groceries were inspected, 1 being good, while the groceries owned by Geo. Baker and the Baker Bros. were excellent. Of 2 bakeries visited, 1 was good and 1 fair. Of the 2 restaurants, 1 was good and 1 fair, although the floors, walls and ceilings were unclean. Eleven second inspections were made. Of 5 groceries visited, 3 were good and 2 fair. Two meat markets were found fair, the refrigerators being unclean and not ventilated. The drug store of Cooper & Son was in excellent condition. Two others visited were found good. One restaurant was visited and found in fair condition, although the employes were untidy and the shelves and tables were unclean.

ZIONSVILLE, BOONE COUNTY—

Seven inspections were made. Two groceries were found fair. Notice was given to cover dried fruits and clean back of yard. Of 2 meat markets visited, 1 was good and 1 fair. Two drug stores and 1 restaurant were found to be in fair shape. One third inspection was made of a drug store, which was found to be in good condition.

REPORT OF COMMITTEE ON STATE MEDICINE AND HYGIENE.

J. N. HURTY, CHAIRMAN, INDIANAPOLIS.

(For 1908, at French Lick.)

In a recent article entitled "The Prevention of Crime," by Prof. Hugo Münsterburg, the statement is made that "Hygiene can prevent more crime than any law." Of course the author refers to that broad, deep hygiene which not only considers the management of transmissible diseases, but which also comprehends the control of the perpetuation of the race. Prof. E. Ray Lankester in his work "The Kingdom of Man," calls attention to the fact that it is man's constant disharmony with his environment which brings disease upon him, and therefore he must obey hygiene, which points out the harmonies to be attained if he would cease to suffer. Professor Lankester also calls attention to the fact that inasmuch as we have, through the practical application of hygiene to every-day life, succeeded in extending the average duration of life to a fraction beyond forty years, there is danger of overpeopling the world with the unfit. He therefore urges the practical enforcement of that higher hygiene which is the only force to control the production of the unfit. It seems that Indiana is the first state in the world to begin this work, and the sterilization law enacted by the legislature of 1907 marks that beginning. The credit of this wise and epoch making statute belongs primarily to Dr. H. C. Sharpe, surgeon of the Indiana Reformatory. He was the first in Indiana to practice vasectomy upon prisoners who, on account of their offenses, were obviously unfit to procreate their kind. Through his early work and writings a movement arose which culminated in a definite bill, and the Hon. Horace G. Read, M. D., member of the General Assembly from Tipton county, introduced and pushed the same through. The law being, as said, epochal, is given herewith:

STERILIZATION LAW.

An act entitled an act to prevent procreation of confirmed criminals, idiots, imbeciles and rapists; providing that superintendents and boards of managers of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two (2) physicians, to examine into the mental condition of such inmates.

(H. 364. Approved March 9, 1907.)

PREAMBLE.

Whereas, Heredity plays a most important part in the transmission of crime, idiosyncrasy and imbecility;

PENAL INSTITUTIONS—SURGICAL OPERATIONS.

Therefore, Be it enacted by the General Assembly of the State of Indiana, That on and after the passage of this act it shall be compulsory for each and every institution in the State, entrusted with the care of confirmed criminals, idiots, rapists and imbeciles, to appoint upon its staff, in addition to the regular institutional physician, two (2) skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers. If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable, and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced unimprovable: Provided, That in no case shall the consultation fee be more than three (\$3.00) dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institution.

In this department of hygiene Indiana has taken another important and first step. The marriage law of 1905 makes illegal the marriage of imbeciles, epileptics, persons of unsound mind or under guardianship as a person of unsound mind, habitual paupers, and any person afflicted with a transmissible disease. This law also forbids the issuing of a marriage license to and also the marriage of any person while under the influence of alcohol.

It is indeed true that these laws are faulty and wholly inadequate to remove the evils at which they are aimed, but they constitute a good beginning nevertheless, and Indiana has the credit of first taking up this important work.

THE COMMITTEE OF ONE HUNDRED ON NATIONAL HEALTH.

A remarkable movement in hygiene is the organization of the Committee of One Hundred on National Health. This committee was first organized in the National Association for the Advance-

ment of Science, April 18, 1907. The objects of the committee are to do what is reasonable for the advancement of the public health, but especially to secure a national health department. An extraordinary paper by Professor Norton, of Yale University, before the National Association for the Advancement of Science called forth the organization. In this paper Professor Norton called attention to the fact that the United States Government spent millions annually for the cure and prevention of disease in plants and animals, but spent comparatively nothing upon human beings for a like purpose.

This committee of one hundred has been endorsed by President Roosevelt, ex-President Grover Cleveland, all of the great newspapers and a score or more of great national societies, including the American Medical Association. The president is Prof. Irving Fisher, of Yale University, and among the vice-presidents are to be found the names of Rev. Lyman Abbott, Miss Jane Addams, Prof. Felix Adler, Hon. Joseph Choate, President Chas. Eliot, of Harvard University, Mr. John Mitchell and Dr. Wm. H. Welch.

An auxiliary society to the Committee of One Hundred is the American Health League, which now has over 9,000 members. This organization will supplement and support the work of the Committee of One Hundred, constituting as it were a reserve force in constant action. The league has an official organ named "American Health," the first number being issued in April, 1906.

It would be to the honor of the Indiana State Medical Association to pass resolutions endorsing this great public health movement.

TO COMBAT AGAINST TUBERCULOSIS.

A review of the law of 1907 creating a State Tuberculosis Hospital was given in a former report, and now we have to record that a site, fulfilling as near as may be all requirements, has been purchased near Rockville, in Parke county.

It now remains to construct the buildings and to provide for the support of the institution. For this a proper appropriation must be made by the General Assembly of 1909, and judging by the experience in securing the first step, the medical profession has still more work to do. And, of course, it is expected that the coming legislature must be educated and led in this important matter, concerning which the majority of its members in the beginning can have little knowledge.

This committee therefore urges continued activity on the part of this association, and recommends the passage of a resolution set-

ting forth and approving what has been done and providing for a committee to represent the association before the General Assembly of 1909 to make a plea for a liberal appropriation. The movement for a state tuberculosis hospital began in the Indiana State Medical Association, and it will, of course, continue its support to the end.

In the last year the Indiana Antituberculosis Society has been organized at Indianapolis, with Hon. John W. Kern as president and Dr. Edgar Kiser secretary. It is growing in strength, but has not yet appeared vigorously in the fight. Local societies have been organized at Richmond, Lafayette and Evansville. They are in the beginning of the work, and will doubtless soon become highly efficient.

The havoc wrought by consumption is indeed awful, as appears from the following table drawn from the vital statistics collected by the State Board of Health:

Total deaths from consumption.....	4,427
Males	1,701
Females	2,726
Mothers in the age period 18 to 40.....	910
Fathers in the age period 18 to 40.....	301
Orphans made under 12 years of age.....	2,264
Homes invaded	3,602
Cost to the people.....	\$10,000,000

In most States a vigorous fight against the great white plague is going on. The New England States, New York, Ohio, Illinois, Minnesota, Iowa, Missouri, Maryland, New Jersey and Pennsylvania are specially prominent in the fight. In Pennsylvania \$1,000,000 has been appropriated, this great sum to be expended in the warfare by the state health commissioner.

The National Association for the Study and Prevention of Tuberculosis, organized at Atlantic City four years ago, continues its great work. Its membership is now away above the thousand mark, and the support given to it by men of capital is liberal. This organization has three large exhibits traveling over the United States, stopping at the cities which wish to see them, and they form a nucleus for the organization of local societies and to start the combat.

The last meeting of this society was held June 5 and 6 in Chicago, immediately following the meeting of the American Medical Association. The great discussion was upon the use of tuberculin as a diagnostic and curative agent. Drs. Kinghorn and Brown of

Saranac Lake, Dr. Dunn of Asheville, and Dr. Evans of Chicago earnestly advocated the use of tuberculin, and all said most emphatically they had no more reason from their experience to fear tuberculin than they had to fear vaccination.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

From September 21 to October 12, 1908, in Washington, D. C., will be held the third International Congress on Tuberculosis. This congress will certainly be a milepost in the progress of medicine and sociology.

President Roosevelt has accepted the presidency and will open the congress. Vice-President Fairbanks and Speaker Cannon have accepted the invitation to act as vice-presidents, and the governors of all the States have been asked to be vice-presidents, and up to date the only declination has come from the Governor of Indiana.

President Roosevelt, in accepting the presidency of the congress, in his letter says: "The International Congress on Tuberculosis is in the interests of universal peace. By joining in such warfare against a common foe the people of the world are brought closer together and made to better realize the brotherhood of man; for a united interest against a common foe fosters universal friendship."

The Congress of the United States has accorded the use of the Capitol building and the new Museum building to the tuberculosis congress, and has appropriated \$40,000 for the cause.

It is expected that not less than 1,000 delegates from Europe will attend the congress on tuberculosis. Among the well-known investigators, discoverers and writers who have signified their intention of being present are Von Behring, Clamette, Pannwitz, Kitasato, Frankel, Landowzy, Newsholene and others. Surely here is an opportunity for practitioners of medicine which occurs but once in a lifetime.

Your committee recommends the passage of resolutions endorsing the International Congress on Tuberculosis and appointing delegates to represent the association at Washington.

A REMARKABLE OLD BOOK.

In conjunction with this matter on tuberculosis we wish to mention the finding of a remarkable old book upon tuberculosis by Dr. Arnold Province of Franklin, Ind. This book, published in 1847 by H. Carlisle of New York, is by Samuel Sheldon Fitch, A. M., M. D., and is entitled "Six Lectures on the Uses of the Lungs." In this book Dr. Fitch sets forth with almost the minuteness of the

writers of today the virtues of the outdoor cure for tuberculosis. Dr. Fitch, in entire ignorance of the tubercle organism, classifies the causes of consumption as follows:

First. Mechanical causes, loss of symmetry, external and internal.

Second. Effeminacy and debility of the constitution.

Third. Poison. Inhaling dust, etc.

Dr. Fitch says: "Consumption can never take place until the air cells of the lungs are closed and so disposed that the air does not fill them when we breathe; and when every air cell is freely open at each inspiration no consumption can ever take place."

Dr. Fitch even anticipated the Beir's hyperaemic method of treatment, for he pictures and describes a breathing tube and gives careful directions for its use. He gives a certain Dr. Ranmadge credit for the invention of the breathing tube. This inhaling tube is described as about four and a half feet long, with a valve so constructed that the air will go into the mouth and lungs through a large free passage, and on returning the air would be forced to go out of the mouth and lungs through a smaller opening. The effect is to allow the lungs to fill rapidly and without exhaustion of strength, and on leaving the lungs it is all passed through an opening not much larger than a knitting needle, by which the air is slowly forced out of the lungs, and by this pressure the lungs are greatly expanded, and the air everywhere opens the chest in the largest manner.

A NEW PHILOSOPHY OF LIFE.

Metchnikoff, the successor of the immortal Pasteur, has given us a work entitled "Orthobiosis"—the straight way of life. This work, founded in hygiene, presents a new standard of morality, a scientific guide to life and a new hope for humanity against the greatest evils that encompass us. In this book Metchnikoff offers his optimistic studies upon disease, old age and death. He says that modern hygiene has already made vast strides towards the destruction of disease, and certainly no one has more right to be listened to than a leader of the Pasteur Institute when he asserts his confidence that rational hygiene and preventive measures will ultimately rid mankind of disease.

The scientific investigation of old age shows that senility is nearly always precocious, and that its disabilities and miseries are for a large part due to preventable causes. Metchnikoff gave us the facts concerning phagocytosis, making clear how the first and

chief function of the phagocytes was to devour invading microbes. Now he shows that the guardians of the body may turn into its deadly enemies by destroying and replacing the higher elements, the specific cells of the different tissues. The physical mechanism of senility appears to be in large measure the result of this process. Certain substances, notably the poisons of such diseases as syphilis and the products of intestinal putrefaction, stimulate the activity of the phagocytes and so encourage this encroachment on the higher tissues.

Metchnikoff believes that the inherited structure of the human large intestine and the customary diet of civilized man are specially favorable to the multiplication of a large number of microbes that cause putrefaction. The avoidance of alcohol and the rigid exclusion from diet of foods that favor putrefaction, such as rich meats and of raw or badly cooked substances containing microbes, do much to remedy the evils. But the special introduction of the microbes which cause lactic fermentation has the effect of inhibiting putrefaction. It appears, therefore, that the Tartar tribes and other primitive peoples who use milk soured in various ways as a regular diet and enjoy extra health and long life, have hit upon a secret of nature which has required the highest order of intellect in civilized life to discern and explain.

If disease and old age are conquered, there remains the last enemy, death. Metchnikoff shows that in the vast majority of cases death is not natural, but comes from accidental and preventable causes. Natural death should occur only in extreme old age, and when it comes in its natural place, at the end of the normal cycle of life, it would be robbed of its terrors and be accepted as gratefully as any other part of the cycle of life. He thinks, in fact, that the instinct of life would be replaced by an instinct of death. It was medicine which discovered that insanity was a physical defect and not a moral sin, and, as a consequent, changing the treatment of the insane by the sane from cruelty to kindness. Now what a marvel it will be if medicine shows the world how not to lose men from great work almost as soon as they gain their highest development; that the tempestuous period of youth should be more calm, the period of early manhood more healthfully productive; that premature old age, with its mental depressions, can be avoided, and that death should come as easily and joyfully as sleep at the ripe age of a century or more? Then most of our present and nearly all the past philosophies of life would become junk, and mankind would start on a new era of living and of development.

Statistical Report for the Year 1908.

REGISTRATION REPORT, 1908.

This report is for the calendar year 1908. The populations are based upon the school census multiplied by $3\frac{1}{2}$. This census is taken annually.

In the following tables the causes of death are arranged according to the International Classification, which has been adopted by all of the registration States of the country. This international classification was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths, with rates per 100,000 population, classified and arranged according to the international system.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal condition.

Table 2A is a recapitulation of the classified deaths by months, ages, color, nationality and conjugal condition.

Table 3 gives deaths from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes by counties in geographical sections.

Table 6 gives annual death rates for nine years, 1900 to 1909, with average of cities of 5,000 population and over, compared with rural and state rates.

Table 7 gives deaths according to occupations by months and ages.

Table A gives births by counties, months, color and nationality of parents.

Table B gives births by counties, number of children born to each mother, grouped ages of parents, stillbirths, plurality and illegitimate births.

Table C gives by counties the marriages by months, color and nationality.

Table D gives by counties the marriages by grouped ages.

BIRTHS.

The number of births reported in the State of Indiana during the year 1908 was 56,713, of which number 29,672 were males and 27,041 females. Of the total males, 29,149 were white and 523 colored. Of the total females, 26,544 were white and 497 colored. In the preceding year 49,112 births reported; males, 25,627; females, 23,485. March had the largest number of births, 5,187, and November the smallest, 4,270. February had the greatest number of deaths, 3,594, and June the lowest, 2,547. The birth (56,713) rate, 20.7. exceeds the death (36,224) rate, 13.2, per 1,000 population.

The nationality of parents shows as follows: American-born fathers, 51,633; American-born mothers, 52,614. Foreign-born fathers, 3,869; foreign-born mothers, 3,346. Nationality not reported: Fathers, 614; mothers, 156.

Of the total number of children born to each mother, 16,148 were first, 12,212 second, 8,344 third, 6,113 fourth, 4,206 fifth, 2,844 sixth, 2,011 seventh, 1,406 eighth, 933 ninth, 596 tenth, 347 eleventh, 389 were twelfth child and over, and 1,164 were not reported.

As to the ages of parents, 768 fathers and 5,990 mothers were under twenty years of age. In the age period of 50 to 60 there were 1,172 fathers and 18 mothers; age period 60 to 70, there were 135 fathers, and between 70 to 80 there were 19 fathers.

One thousand five hundred and thirty-nine stillbirths also reported as deaths. The illegitimate births numbered 984, of which 511 were males and 473 females. The plural births numbered 1,190, of which 595 were males and 595 females.

MARRIAGES.

Total marriages reported, 24,616. This is a decrease compared with the preceding year of 2,671. November had the greatest number of marriages, 2,504, and March had the smallest number, 1,658. The general statistics on marriage will be found in tables C and D.

DEATHS.

Total number of deaths reported in 1908 was 36,224, with a rate of 13.2. In the preceding year, 36,461, with a rate of 13.4. Males, 19,194; females, 17,030. White males, 18,442; colored, 752; white females, 16,362; colored, 668. American-born, 16,702 males and 15,208 females; foreign-born, 2,030 males, 1,545 females; nationality not reported, 462 males, 277 females. Single males, 8,794;

females, 6,491; married males, 7,304; females, 5,832; widowed males, 2,828; females, 4,603; conjugal condition not reported, 268 males and 104 females.

The number of deaths, with rates for the years named, appear in the following table:

	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Deaths.....	35,516	36,544	34,069	33,802	37,240	36,502	35,902	36,461	36,224
Annual rate.....	14.1	14.5	13.5	13.4	14.0	13.7	13.5	13.4	13.2

Of the total number of deaths, 7,714, or 21.2 per cent of the whole number, occurred in the first year of life. This is almost one-fourth of the total.

Two thousand one hundred and seventy-two deaths occurred in the age period of 1 to 5, making the total loss of children under 5 years of age 9,886, or 27.2 per cent of the total deaths. This is 17.4 per cent of the total births reported. In the age period of 5 to 20 there were 2,276 deaths, or 6.2 per cent of the total number. The total loss under 21 years of age is 12,162, or 33.5 per cent of the total deaths. In the age period of 20 to 50, practically the prime of life, there were 7,887 deaths, or 21.7 per cent of the total deaths. There were 392 deaths of persons over 90 years of age, a decrease of ten as compared with last year.

The following table, giving deaths by months, shows February with the greatest number of deaths, with January, March and April having about the same. June had the lowest number of deaths, as was the case in the two preceding years:

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3,388	3,504	3,389	3,152	2,866	2,547	2,968	3,068	2,897	2,853	2,702	2,714

February, March and April had the most tuberculosis deaths. February had the most pneumonia deaths; July and August were highest with diarrhéal diseases, and October had the greatest number of typhoid deaths.

PRINCIPAL CAUSES OF DEATH FOR THE LAST NINE YEARS, WITH AVERAGE.

The following table gives the principal causes of death in their numerical order for the past nine years, and also the yearly average for each cause, and chart number 1 gives a graphic representation of the principal causes for 1908:

PRINCIPAL CAUSES OF DEATH IN INDIANA FOR LAST NINE YEARS, WITH AVERAGE.

	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
1. Pulmonary tuberculosis.....	3,364	4,169	3,952	3,915	4,436	3,998	3,854	3,888	3,825	3,933
2. Organic heart diseases.....	1,759	1,754	1,880	2,108	2,180	2,182	2,208	2,766	3,534	2,261
3. Pneumonia.....	2,744	3,384	2,758	2,634	3,487	3,124	2,890	3,258	2,574	2,983
4. Accidents.....	1,334	1,463	1,391	1,601	1,622	1,795	1,796	1,981	2,021	1,667
5. Cancer.....	1,046	1,113	1,209	1,217	1,259	1,424	1,417	1,513	1,739	1,326
6. Cerebral congestion and hemorrhage.....	1,056	1,264	1,272	1,346	1,435	1,351	1,496	1,599	1,695	1,390
7. Diseases of infants.....	1,361	1,247	1,183	1,318	1,726	1,908	1,766	1,783	1,664	1,550
8. Infantile diarrhoea.....	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,639	1,635	1,719
9. Bright's disease.....	1,145	1,066	1,133	1,164	1,296	1,423	1,549	1,644	1,420	1,315
10. Other circulatory diseases.....	470	574	648	596	665	637	768	837	965	684
11. Typhoid fever.....	1,440	1,198	1,217	1,013	1,013	928	913	933	885	1,060
12. Influenza.....	424	1,049	302	348	434	591	224	666	967	545
13. Other forms of tuberculosis.....	1,281	493	440	477	542	494	602	624	702	629
14. Stomach diseases.....	676	704	641	613	561	678	699	617	687	653
15. Broncho pneumonia.....	228	480	417	416	672	535	576	585	676	509
16. Diarrhoea and enteritis.....	345	462	391	411	427	450	460	605	575	447
17. Liver diseases.....	530	513	530	527	596	578	591	561	518	549
18. Other digestive diseases.....	686	662	605	519	530	498	524	491	487	555
19. Bronchitis.....	522	562	484	523	571	540	460	431	452	505
20. Whooping cough.....	287	181	164	148	94	136	157	136	416	191
21. Paralysis.....	1,109	986	762	762	935	901	777	691	399	813
22. Suicides.....	196	254	275	254	253	338	321	361	394	296
23. Malformations.....	242	180	162	152	172	167	284	266	344	218
24. Diphtheria and croup.....	746	555	424	462	314	366	402	353	315	437
25. Other genito-urinary diseases.....	274	243	390	437	229	194	228	266	292	283
26. Diabetes.....	111	204	197	197	226	231	269	252	290	219
27. Simple meningitis.....	447	553	509	365	538	352	240	384	264	405
28. Appendicitis.....	125	137	145	163	184	194	174	205	248	173
29. Dysentery.....	323	283	277	211	184	218	235	242	245	244
30. Acute nephritis.....	223	142	150	191	207	189	230	169	234	193
31. Measles.....	85	161	67	73	212	6	23	213	209	116
32. Other respiratory diseases.....	298	370	352	276	325	285	276	242	195	291
33. Skin diseases.....	261	124	181	129	140	179	170	164	177	169
34. Rheumatism.....	265	184	209	220	266	253	274	185	174	225
35. Cerebro-spinal meningitis.....	391	236	187	341	347	460	481	180	154	306
36. Diseases of female genital organs.....	107	85	87	85	91	88	112	123	149	103
37. Homicides.....	27	48	36	62	48	85	93	122	122	71
38. Convulsions of infants.....	361	406	339	335	345	306	254	221	114	300
39. Simple peritonitis.....	325	354	366	311	375	338	265	222	99	295
40. Scarlet fever.....	141	149	150	164	192	133	101	91	96	135
41. Malaria.....	374	197	161	131	116	110	102	81	83	151
42. Smallpox.....	19	21	75	195	97	35	8	8	10	52
Totals.....	29,208	29,965	27,880	27,909	30,981	30,404	30,092	31,008	31,963	29,977

PRINCIPAL CAUSES OF DEATH

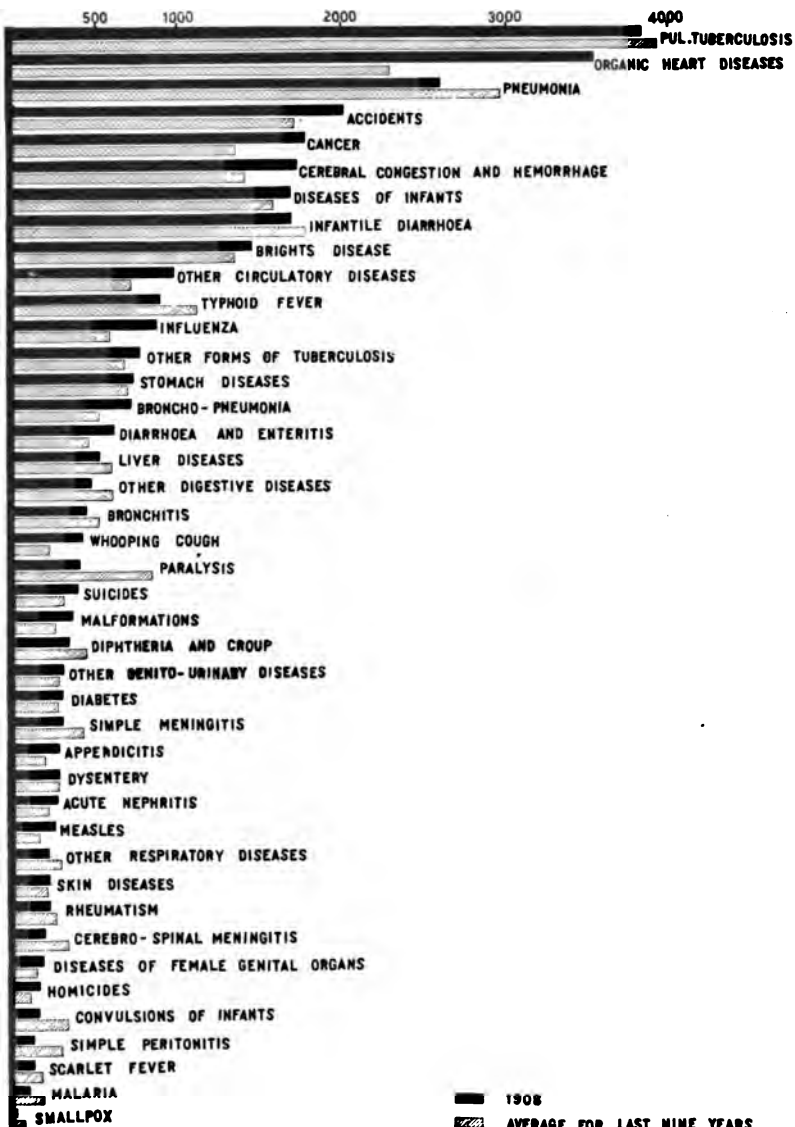


CHART 1

TUBERCULOSIS.

Havoc Wrought by Consumption in Indiana in 1904, 1905, 1906, 1907, 1908.

	1904	1905	1906	1907	1908
Total consumption deaths.....	4,078	4,492	4,456	4,471	4,527
Male deaths.....	1,807	1,745	1,075	1,964	2,065
Female deaths.....	3,171	2,793	2,771	2,328	2,442
Mothers, age 18 to 40, prime of life.....	887	987	917	826	875
Fathers, age 18 to 40, prime of life.....	480	515	225	343	383
Orphans made under 12 years of age.....	2,703	2,694	2,353	2,340	2,407
Homes invaded.....	3,396	3,307	3,283	3,849	4,022

TUBERCULOSIS, ALL FORMS.

Deaths by months, with average for last nine years.

MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	417	389	402	368	420	419	415	373	411	401
February.....	422	440	389	350	414	407	394	428	425	407
March.....	454	433	459	445	550	461	443	449	437	459
April.....	455	449	444	411	459	426	439	455	446	442
May.....	405	420	405	383	502	391	398	394	412	411
June.....	394	348	323	363	400	361	331	356	372	361
July.....	382	394	320	373	397	361	329	377	357	365
August.....	392	403	331	340	390	355	367	389	314	364
September.....	343	309	353	354	347	306	307	340	341	333
October.....	366	350	305	306	365	326	344	327	330	335
November.....	316	357	320	333	352	326	346	315	344	334
December.....	399	370	345	388	582	353	343	329	338	382
Totals.....	4,745	4,662	4,396	4,414	5,178	4,492	4,456	4,522	4,527	4,599

TUBERCULOSIS, ALL FORMS.

Deaths by ages, with average for last nine years.

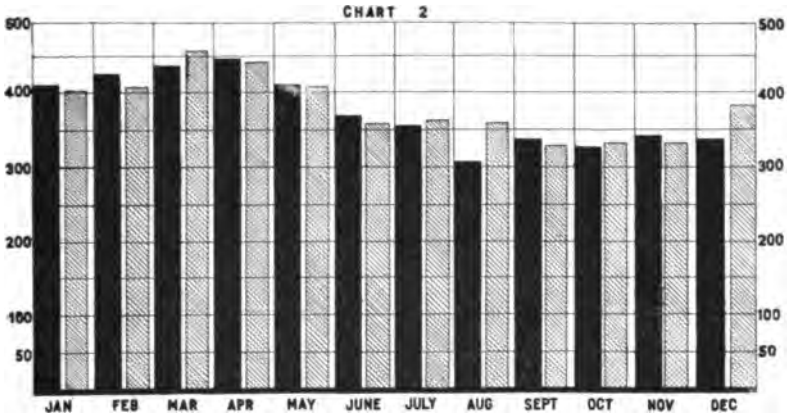
Ages.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	155	135	113	109	144	108	126	132	152	130
1-2 years.....	74	62	68	59	99	85	62	85	86	75
2-3 years.....	42	34	31	24	42	26	38	48	30	35
3-4 years.....	23	23	17	23	25	18	31	24	21	22
4-5 years.....	12	17	12	14	13	11	24	28	15	16
5-10 years.....	69	63	51	64	68	63	64	58	55	61
10-15 years.....	90	99	98	92	126	97	106	93	100	100
15-20 years.....	532	417	401	436	501	449	411	400	400	438
20-25 years.....	690	718	672	707	725	697	681	667	609	685
25-30 years.....	627	595	598	572	614	574	577	573	532	584
30-35 years.....	457	519	464	491	509	464	464	467	432	474
35-40 years.....	388	386	346	374	436	419	375	341	356	380
40-45 years.....	346	310	311	267	316	273	242	253	312	292
45-50 years.....	269	248	235	225	286	245	260	270	259	265
50-55 years.....	218	185	224	217	232	222	221	226	227	219
55-60 years.....	209	190	181	193	206	153	171	190	225	191
60-65 years.....	185	200	153	166	189	165	170	179	200	178
65-70 years.....	159	171	155	143	152	165	162	180	202	165
70-75 years.....	124	118	124	116	136	122	122	138	162	129
75-80 years.....	78	81	78	74	75	72	96	104	92	83
80-90 years.....	36	42	38	30	47	34	35	48	48	39
90 years and over.....	2	2	1	2	3	4	3	5	3

TUBERCULOSIS ALL FORMS

BY MONTHS

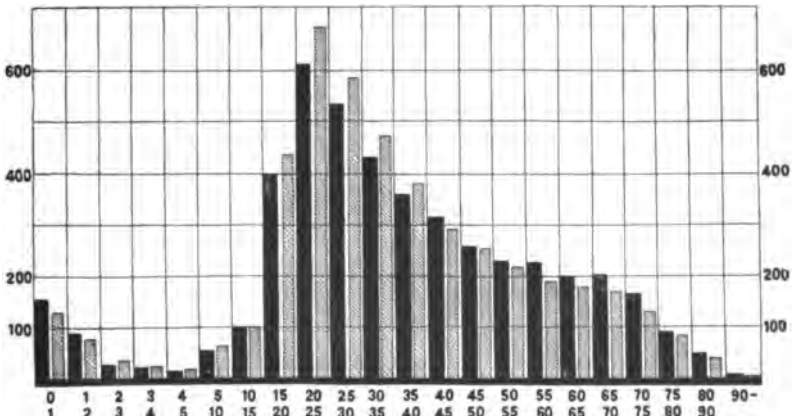
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▨ - AVERAGE FOR LAST NINE YEARS



BY AGES

CHART 3



PULMONARY TUBERCULOSIS.
Deaths by Months, with Average for Last Nine Years.

MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	300	368	358	324	379	305	359	330	358	352
February.....	300	390	353	318	372	379	340	392	363	357
March.....	318	388	416	399	485	421	391	396	380	399
April.....	339	408	400	365	409	390	396	392	379	385
May.....	266	378	368	339	448	346	337	329	347	351
June.....	301	310	297	326	359	330	282	303	318	314
July.....	244	349	295	323	358	310	284	314	290	307
August.....	271	254	300	293	332	308	312	312	257	293
September.....	212	266	296	318	302	263	253	286	278	275
October.....	274	302	266	261	322	266	289	276	275	281
November.....	248	321	288	297	317	287	302	276	293	292
December.....	291	335	306	352	353	313	310	282	287	314
Totals.....	3,364	4,069	3,952	3,915	4,436	3,998	3,854	3,888	3,825	3,922

PULMONARY TUBERCULOSIS.
Deaths by Ages, with Averages for Last Nine Years.

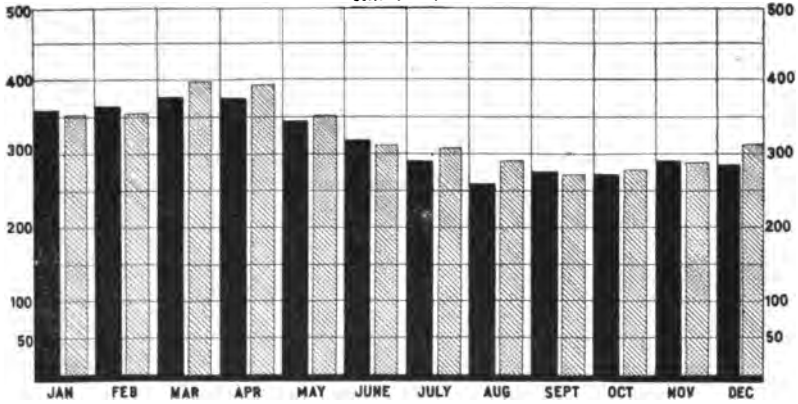
AGES.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	43	76	59	53	72	53	60	63	78	62
1-2 years.....	13	35	33	28	48	37	27	31	27	31
2-3 years.....	9	14	16	11	23	13	19	19	15	15
3-4 years.....	3	12	7	10	14	10	10	6	8	9
4-5 years.....	3	7	6	7	9	3	8	10	4	6
5-10 years.....	81	28	28	35	32	37	31	29	23	30
10-15 years.....	59	84	75	59	101	75	76	66	62	73
15-20 years.....	318	389	373	393	457	411	359	356	348	378
20-25 years.....	543	676	626	666	687	650	625	623	562	628
25-30 years.....	491	559	553	535	582	538	535	517	499	534
30-35 years.....	338	490	435	461	496	437	429	430	395	433
35-40 years.....	289	356	329	343	412	385	342	318	316	343
40-45 years.....	252	287	299	244	271	254	220	234	278	259
45-50 years.....	199	223	225	213	262	219	231	238	220	225
50-55 years.....	158	174	196	194	209	200	198	197	188	190
55-60 years.....	155	166	166	175	186	139	155	165	199	167
60-65 years.....	131	182	140	151	175	151	145	153	170	155
65-70 years.....	113	148	137	123	137	154	147	163	169	143
70-75 years.....	92	105	112	107	121	111	103	126	138	112
75-80 years.....	50	73	70	67	65	66	76	88	76	70
80-90 years.....	29	37	36	25	39	28	31	43	42	34
90 years and over.....		2	1	1	3		4	1	3	1

PULMONARY TUBERCULOSIS BY MONTHS

■ - 1908

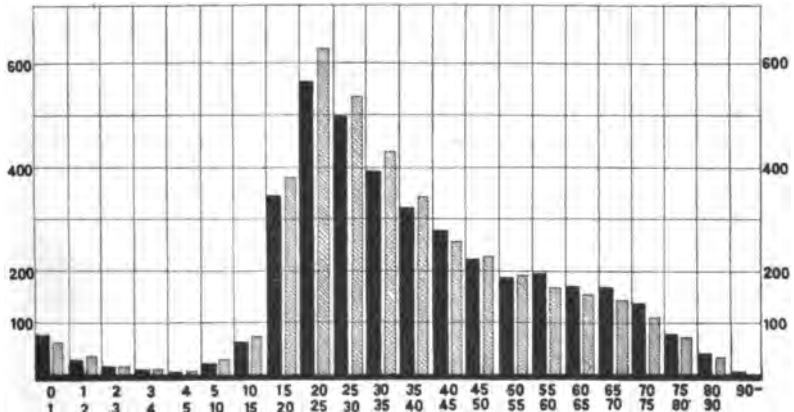
■ - AVERAGE FOR LAST NINE YEARS

CHART 4



BY AGES

CHART 5



CONSUMPTION DEATH RATES PER 100,000 BY COUNTIES FOR 1908, IN INDIANA.

State Rate—165.8.

COUNTIES.	Tuber- culosis, All Forms.	COUNTIES.	Tuber- culosis, All Forms.
Adams.....	145.3	Lawrence.....	201.0
Allen.....	128.3	Madison.....	134.9
Bartholomew.....	200.5	Marion.....	222.5
Benton.....	64.9	Marshall.....	71.8
Blackford.....	160.2	Martin.....	168.6
Boone.....	150.3	Miami.....	138.7
Brown.....	99.6	Monroe.....	219.3
Carroll.....	185.4	Montgomery.....	180.5
Cass.....	190.1	Morgan.....	218.5
Clark.....	168.4	Newton.....	103.6
Clay.....	129.1	Noble.....	61.8
Clinton.....	178.3	Ohio.....	237.3
Crawford.....	256.1	Orange.....	188.2
Daviess.....	118.4	Owen.....	143.1
Dearborn.....	140.7	Parke.....	157.3
Decatur.....	187.3	Perry.....	178.3
DeKalb.....	118.3	Pike.....	175.8
Delaware.....	180.8	Porter.....	62.0
Dubois.....	120.4	Posey.....	224.7
Elkhart.....	111.1	Pulaski.....	81.6
Fayette.....	187.4	Putnam.....	224.5
Floyd.....	218.6	Randolph.....	187.6
Fountain.....	166.0	Ripley.....	221.7
Franklin.....	177.8	Rush.....	187.3
Fulton.....	163.9	Scott.....	195.6
Gibson.....	164.2	Shelby.....	236.7
Grant.....	160.7	Spencer.....	147.8
Greene.....	173.7	Starke.....	56.4
Hamilton.....	157.3	Steuben.....	112.2
Hancock.....	213.4	St. Joseph.....	150.5
Harrison.....	131.6	Sullivan.....	145.9
Hendricks.....	185.8	Switzerland.....	249.7
Henry.....	207.9	Tippecanoe.....	225.1
Howard.....	211.1	Tipton.....	152.9
Huntington.....	101.2	Union.....	273.5
Jackson.....	193.3	Vanderburg.....	174.3
Jasper.....	165.8	Vermillion.....	148.3
Jay.....	143.6	Vigo.....	171.1
Jefferson.....	241.2	Wabash.....	71.1
Jennings.....	143.0	Warren.....	140.5
Johnson.....	202.7	Warrick.....	147.0
Knox.....	175.2	Washington.....	263.0
Kosciusko.....	127.7	Wayne.....	243.3
Lagrange.....	103.5	Wells.....	107.2
Lake.....	137.1	White.....	59.4
Laporte.....	91.0	Whitley.....	153.6

MONTHLY ANALYSIS OF TUBERCULOSIS DEATHS.

January.—The total number of deaths from all forms, 391. Of this number 333 were pulmonary tuberculosis. The male deaths numbered 196, female 195. Of the males, 33 were married and in the age period of 18-40, and left 66 orphans under 12 years of age. Of the females 61 were married, in the same age period as above, and left 122 orphans under 12 years of age. The total number of orphans made by the disease this month, 188. How many of these will be taken care of in orphan asylums cannot be said, but it is true that tuberculosis is preventable and the making of these orphans is a sin chargeable against the state. Number of homes invaded during the month by tuberculosis, 352. Four of the tuberculosis deaths were of persons over 80 years of age, and 25 were in the age period of 70-80.

February.—Total number of deaths in the month from all forms of tuberculosis, 398. Of this number 335 were of the pulmonary form. The male deaths numbered 183; female, 215. Of the males 36 were married, in the age period of 18-40, and left 72 orphans under 12 years of age. Of the females, 56 were married, in the same age period as above, and left 112 orphans under 12 years of age. Total number of orphans under 12 years of age made by this disease in this month, 184. As tuberculosis is preventable, the making of these orphans is a sin, chargeable in a great part against the State. Number of homes invaded in the month by tuberculosis, 347. Five of the tuberculosis deaths were of persons 80 years of age and over.

March.—Total number of deaths in the month from all forms of tuberculosis, 416. Of this number 365 were of the pulmonary form. The male deaths numbered 207; female, 209. Of the males 43 were in the age period of 18-40, and left 86 orphans under 12 years of age. Of the females, 59 were in the same age period as above, and left 118 orphans under 12 years of age. Total number of orphans made by consumption in one month, 204. Total number of homes invaded, 396. One of the tuberculosis deaths was a man over 90 years of age.

April.—Total number of deaths in the month from all forms of tuberculosis, 411. Of this number 346 were of the pulmonary form. In the corresponding month last year, 424 deaths, of which 363 were pulmonary. The male deaths numbered 191 and female 220. Of the males 39 were in the age period of 18 to 40 and left 78 orphans under 12 years of age. Of the females 67 were in the same age period as above and left 134 orphans under 12 years of

age. The total number of orphans made by consumption in one month, 212; the total number of homes invaded, 336. Two of the tuberculosis deaths were of women over 90 years of age and 5 (3 men and 2 women) were in the age period of 80 to 90.

May.—Total number of deaths in the month, from all forms, 389. Of this number 330 were of the pulmonary form. In the corresponding month last year 343, of which 294 were pulmonary. The male deaths numbered 171, and female 218. Of the males 24 were in the age period of 18-40 and left 48 orphans under 12 years of age. Of the females 78 were in the same age period and left 156 orphans under 12 years of age. The total number of orphans made by consumption in one month, 204. Total number of homes invaded, 367. Six of the tuberculosis deaths were of persons over 80 years of age and one was over 90.

June.—Total number of deaths from all forms of tuberculosis were 344. Of this number, 292 were of the pulmonary. In the corresponding month last year, 343 deaths, of which 294 were pulmonary. This month the male deaths numbered 153 and the females 191. Of the males, 31 were in the age period of 18 to 40 and left 62 orphans under 12 years of age. Of the females, 66 were in the same age period and left 132 orphans under 12 years of age. Total number of orphans made by consumption in one month were 194. Total number of homes invaded, 331. Of the tuberculosis deaths, 37 were over 60 years of age.

July.—Total number of deaths from all forms of tuberculosis were 339, females 134, and males 205. Of the males, 26 were married in the age period of 18 to 40, and left 52 orphans under 12 years of age. Of the females, 70 were married in the above age period, and left 140 orphans under 12 years of age. Total number of orphans made by tuberculosis this month were 192. Total number of homes invaded, 317.

August.—Total number of deaths from all forms, 290, of which 237 were pulmonary. Male deaths, 123; female, 167. Of the males, 20 in the age period of 18-40, and were married and left 40 orphans. Of the females, 46 were married in the same age period as above and left 118 orphans. Total orphans made by tuberculosis in one month, 158. Total number of homes invaded, 271.

September.—Total number of deaths from all forms, 318, of which 263 were pulmonary. Male tuberculosis deaths numbered 138, females 180. Of the males 19 were in the age period of 18 to 40 and were married and left 38 orphans. Of the females 53 were

in the same age period and married and left 106 orphans. We therefore credit 144 orphans to this preventable disease in one month. Many of these will drift into orphan asylums to be cared for, but as yet little or nothing is done to prevent the production of these orphans. Total number of homes invaded, 219.

October.—Total number of deaths, 304, of which 252 were pulmonary. The male tuberculosis deaths numbered 161; female, 143. Of the males, 25 were married in the age period of 18-40, and left 51 orphans under 12 years of age. Of the females, 56 were married and left 117 orphans in the same age period. We, therefore, credit 168 orphans to this preventable disease in one month. Some of these will drift into orphan asylums, to be cared for at public expense. Total number of homes invaded, 293. We have to record 4 deaths from pulmonary tuberculosis of persons over 80 years of age, and 18 of persons in the age period of 70-80. As usual, the greater number of deaths occurred in the useful period of life. The number was 181 in the age period of 15 to 50.

November.—Total number of deaths, 318, of which 278 were pulmonary. Males, 153; females, 165. Of the males, 28 were in the age period of 18 to 40, and were married and left 56 orphans under 12 years of age. Of the females, 52 were married and in the same age period as above, and left 104 orphans. Total number of orphans produced by this disease in November last was 160. A certain number of these orphans will find their way into orphans' homes to be cared for by the State, but the State has not yet lifted its hand to prevent the death of the parents, which would be far cheaper and better business. Twenty-four of the tuberculosis deaths were between 70 and 80 years of age, and two were between 80 and 90. One hundred ninety-six, or 61 per cent. of the total of consumption deaths, were in the age period of 15 to 20.

December.—The total tuberculosis deaths numbered 291. Of this number 256 were of the pulmonary form; males, 125, and females, 135. Of the males, 17 were married in the age period of 18 to 40 and left 34 orphans under 12 years of age. Of the females, 59 were married in the same age period as above, and left 112 orphans. The total number of orphans produced in one month from this disease, 146. One hundred and seventy-three of the tuberculosis deaths were persons in the age period of 18 to 50, the useful period of life. The question always recurs when these figures are considered: When will law-makers of the State make opposition to this awful destruction of life and loss of money?

PNEUMONIA.

A decrease appears for pneumonia. The total number of deaths from this cause in 1908 was 2,517, and the annual average for the last nine years, 3,319, while in 1907 the total number was 3,202. In Indiana, consumption leads as a cause of death, and pneumonia is third. The tables by months and by age periods, with their accompanying graphic charts, show the pneumonia status in this State.

PNEUMONIA.

Deaths by Months, with Average for Last Nine Years.

MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	373	655	478	450	579	601	490	445	425	490
February.....	435	673	535	424	750	781	439	646	454	570
March.....	616	646	497	419	761	656	541	532	414	564
April.....	498	466	371	330	576	260	404	290	277	385
May.....	234	280	207	240	326	189	232	276	166	239
June.....	94	120	104	129	115	90	119	144	74	109
July.....	62	72	70	83	101	82	88	62	45	74
August.....	65	74	97	86	69	69	82	68	52	73
September.....	56	90	113	114	86	88	98	75	69	87
October.....	89	156	169	134	135	148	189	145	103	144
November.....	136	202	196	246	251	253	300	218	195	222
December.....	223	399	307	389	353	372	410	301	243	332
Totals.....	2,883	3,823	3,319	3,044	4,102	3,594	3,392	3,202	2,517	3,319

PNEUMONIA.

Deaths by Ages, with Average for Last Nine Years.

AGES.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	542	758	692	703	919	898	714	639	623	721
1-2 years.....	206	248	246	216	326	215	262	209	163	236
2-3 years.....	113	123	113	117	145	97	127	96	63	109
3-4 years.....	53	73	47	57	87	63	67	57	19	58
4-5 years.....	40	46	39	34	53	28	46	29	22	37
5-10 years.....	82	120	93	102	145	90	91	65	55	93
10-15 years.....	64	66	55	57	72	71	50	40	35	56
15-20 years.....	85	139	93	88	128	89	95	63	60	92
20-25 years.....	95	130	107	83	108	83	77	84	61	92
25-30 years.....	92	119	86	72	98	79	89	90	60	86
30-35 years.....	91	115	96	58	104	90	86	87	63	87
35-40 years.....	104	121	80	78	114	107	104	98	75	98
40-45 years.....	89	142	104	77	105	98	106	88	71	97
45-50 years.....	107	110	87	103	137	106	112	100	78	104
50-55 years.....	116	159	118	89	137	130	130	143	72	115
55-60 years.....	107	179	112	132	136	140	137	125	101	129
60-65 years.....	181	218	142	164	195	173	155	172	122	169
65-70 years.....	162	244	205	172	225	237	216	215	168	205
70-75 years.....	153	246	192	202	261	270	229	243	212	224
75-80 years.....	162	191	200	182	268	226	232	238	180	209
80-90 years.....	195	216	151	204	271	237	232	290	209	225
90 years and over.....		25	24	27	42	28	25	33	18	24

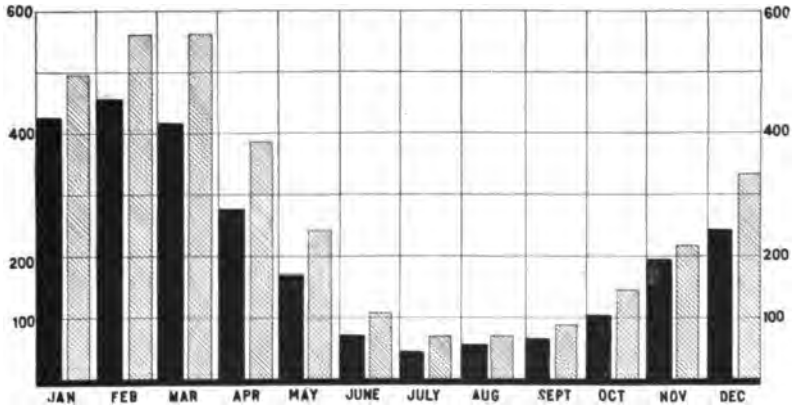
PNEUMONIA DEATHS

BY MONTHS

■—1908

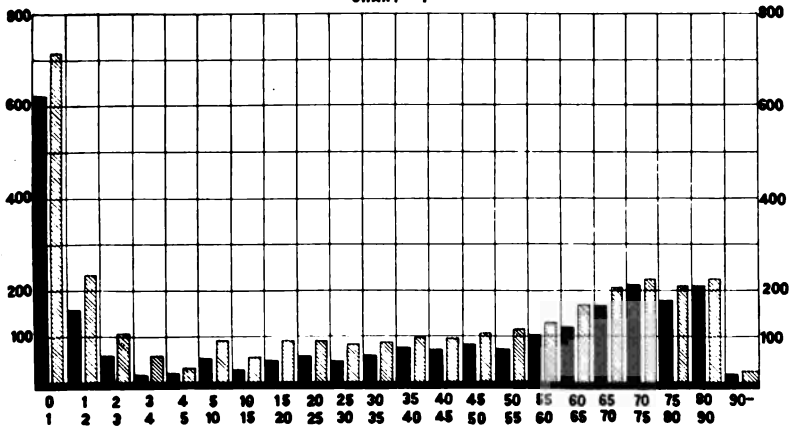
▨—AVERAGE FOR LAST NINE YEARS

CHART 6



BY AGES

CHART 7



MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

January.—The disease existed in every county in the State. No special epidemic was reported. Total number of deaths 462, against 427 in the corresponding month last year. Of the total number of pneumonia deaths, 87 were under 1 year of age; 67 were in the age period of 60-70; 76 in age period 70-80; 42 in the age period 80-90, and 2 were over 90.

February.—The disease existed in every county in the State. No special epidemic was reported. Total number of deaths, 509, against 664 in the corresponding month last year. Forty-four of the pneumonia deaths were 80 years of age and over, and 93 were under one year of age. The male deaths numbered 257, and the females 252.

March.—The disease existed in every county in the State, but no special epidemic was reported. Total number of deaths, 463, against 575 in the corresponding month last year. The male pneumonia deaths, 241; female, 222. By certain age periods pneumonia deaths were: Under 1 year, 121; 1-5, 73; 5-20, 35; 20-40, 41; 40-60, 53; 60-80, 102; 80 and over, 38.

April.—This disease was fifth in prevalence in the preceding month and sixth this month. No special epidemic was reported. The total number of pneumonia deaths was 332, against 284 in the corresponding month last year. The male pneumonia deaths numbered 180 and the female, 153. By certain age periods, pneumonia deaths were: Under one year, 180; 1-10, 60; 10-20, 11; 20-40, 38; 40-60, 32; 60 and over, 84.

May.—This disease was eleventh in area of prevalence. In March, an indoor month, it was fifth. In May, 1907, the pneumonia deaths numbered 331. Of the 222 recorded this month, 124 were males and 98 females. As usual, the greatest number, 93, of pneumonia deaths, occurred in children under five years of age. Thirty-nine deaths occurred in the age period of 70-80; 80-90, 12, and 2 were over 90.

June.—The disease was eighteenth in area of prevalence. In the preceding month it was eleventh. Total number of pneumonia deaths was 96. In the corresponding month last year, 151. Of the 96 deaths recorded this month, 56 were males and 40 females. By age periods, the deaths were: Under 5 years, 45; 5-20, 8; 20-40, 6; 40-70, 15; 70 and over, 22.

July.—The disease was eighteenth in area of prevalence and it occupied this same position in the preceding month. In the cor-

responding month last year it was seventeenth. Total number of pneumonia deaths, 60; males 35, females 25. Deaths under one year of age from pneumonia numbered 12. The disease caused one death in an old man over 90 years of age.

August.—This disease was seventeenth in area of prevalence. It occupied the same position exactly in August, 1907. Total number of pneumonia deaths, 63; males, 30; females, 33. Deaths under one year caused by pneumonia, 12. In the age period 1-5, 10. There were 17 deaths in persons in the age period of 17-80, and two were between 80-90.

September.—This disease was fourteenth in area of prevalence. It was twelfth in the corresponding month last year. The deaths numbered 93, and in the same month last year 94. The male deaths numbered 41 and the female 52.

October.—This disease was reported tenth in area of prevalence. In the preceding month it was fourteenth and in the corresponding month last year, seventh. The deaths numbered 130. In the same month last year, 160. Of the pneumonia deaths, 37 were under 5 years of age, and 77 were 60 and over. The male pneumonia deaths numbered 60, and female 70.

November.—This disease was reported seventh in area of prevalence, and in the preceding month it was tenth. Total number of deaths, 219. In the corresponding month last year, 245. The male pneumonia deaths numbered 23, the female 24. Forty-three of the pneumonia deaths occurred in infants under one year of age.

December.—This disease was reported sixth in area of prevalence, and was seventh in the preceding month and fifth in December, 1907. Total number of pneumonia deaths, 262. In the same month last year, 334 deaths, and in the preceding month 219. The male pneumonia deaths numbered 140, and the females 133. Eighty-five of the pneumonia deaths occurred in infants under 5 years of age.

TYPHOID FEVER.

The typhoid fever deaths for 1908 numbered 885, which is a decrease as compared with the annual average, 1,060, for the last nine years. As shown in the tables herewith, and by the graphic charts drawn therefrom, typhoid has gradually fallen since 1900. The last five months of the year show more deaths from typhoid than the seven preceding months.

TYPHOID FEVER.

Deaths by Months, with Average for Last Nine Years.

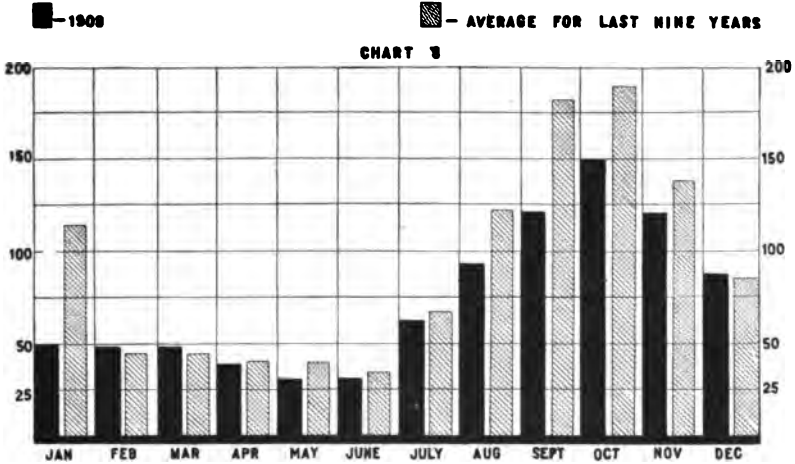
MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	109	74	66	61	36	511	39	72	50	113
February.....	52	50	37	53	55	35	29	27	49	46
March.....	40	49	41	52	62	34	40	48	49	46
April.....	39	41	45	45	61	26	32	38	38	40
May.....	44	35	31	39	55	33	39	42	32	39
June.....	27	27	28	42	58	48	29	30	32	35
July.....	65	81	88	64	70	57	52	58	63	66
August.....	144	148	176	120	107	121	96	145	93	122
September.....	245	198	237	193	138	203	155	141	121	181
October.....	323	222	225	165	167	154	168	143	150	190
November.....	208	185	155	104	137	101	148	84	121	138
December.....	144	88	88	72	67	65	86	75	87	85
Totals.....	1,440	1,198	1,217	1,013	1,013	928	913	933	885	1,060

TYPHOID FEVER.

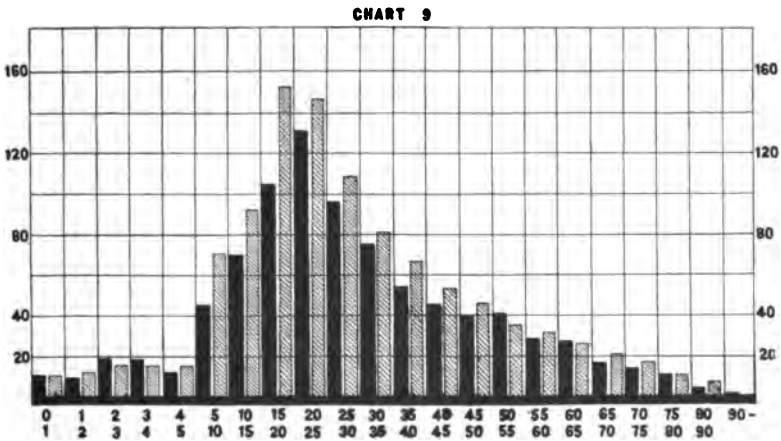
Deaths by Ages, with Average for Last Nine Years.

AGES.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	13	15	9	4	16	11	12	8	11	11
1-2 years.....	14	14	15	13	11	14	11	7	10	12
2-3 years.....	18	12	29	12	18	16	13	13	19	16
3-4 years.....	26	18	19	17	8	11	19	13	19	16
4-5 years.....	22	19	20	16	16	18	18	10	12	16
5-10 years.....	105	91	77	77	74	72	65	58	45	73
10-15 years.....	136	87	98	102	82	74	85	92	72	92
15-20 years.....	229	178	167	160	133	125	138	145	105	153
20-25 years.....	193	177	169	136	137	136	120	126	131	147
25-30 years.....	120	146	139	102	89	94	94	94	96	108
30-35 years.....	106	78	117	62	73	64	76	79	76	81
35-40 years.....	98	70	69	62	73	45	62	67	57	67
40-45 years.....	71	75	73	49	47	49	34	46	45	54
45-50 years.....	52	49	58	45	49	46	37	41	40	46
50-55 years.....	34	34	37	33	45	32	36	32	41	36
55-60 years.....	50	36	31	35	37	31	22	24	29	32
60-65 years.....	28	33	22	18	42	30	18	28	28	27
65-70 years.....	28	25	25	21	22	20	16	16	17	21
70-75 years.....	23	24	21	19	18	19	10	17	15	18
75-80 years.....	16	5	13	12	10	9	15	10	11	11
80-90 years.....	9	8	4	11	7	8	8	6	4	7
90 years and over.....				1					1	

TYPHOID FEVER DEATHS BY MONTHS



BY AGES



MONTHLY ANALYSIS FOR TYPHOID FEVER DEATHS.

January.—Two hundred and fifty-six cases reported in 42 counties, with 51 deaths. In the corresponding month last year, 688 cases in 50 counties, with 65 deaths. The disease prevailed unusually for January in the following counties: Clark 12 cases, Grant 7, Jackson 8, Lake 10, Laporte 20.

February.—One hundred and ninety-two cases reported in 33 counties, with 47 deaths. In the corresponding month last year, 256 cases in 42 counties, with 51 deaths. The disease prevailed unusually in the following counties: Clark, Marion and Vigo.

March.—Two hundred and forty-five cases reported in 40 counties, with 45 deaths. In the corresponding month last year 304 cases in 33 counties, with 40 deaths. The disease was epidemic in the following counties: Monroe, 33 cases and no deaths; Vanderburgh, 14 cases and 4 deaths; Marion, 11 cases and 5 deaths.

April.—One hundred ninety-eight cases, with 35 deaths, in 36 counties. In the corresponding month last year, 245 cases, with 45 deaths, in 40 counties. The disease existed unusually in the following counties: Clark, 8 cases, with one death; Laporte 26 cases, 2 deaths.

May.—Ninety-one cases, with 27 deaths, reported in 26 counties. In the corresponding month last year, 204 cases, with 32 deaths, in 31 counties. The disease existed unusually in the following counties: Blackford, 10 cases; Clark, 5; Delaware, 5; Laporte, 17; Monroe, 9.

June.—One hundred and twenty-seven cases reported from 45 counties, with 27 deaths. In the corresponding month last year, 298 cases in 37 counties, with 25 deaths. The disease existed unusually in the following counties: Jefferson, 10 cases; Laporte, 14; St. Joseph, 6.

July.—Two hundred and 7 cases reported from 53 counties, with 58 deaths. In the corresponding month last year 312 cases in 64 counties, with 53 deaths. The disease probably existed in every county, for we know that many cases are diagnosed as malaria, indigestion, etc., which are really mild typhoid. The disease prevailed unusually in the following counties: Allen, 17 cases, and Elkhart, 15 cases.

August.—Four hundred and seventy-eight cases in 69 counties, with 81 deaths. In the corresponding month last year, 728 cases in 79 counties, with 131 deaths. The disease prevailed unusually in the following counties: Allen, 17; Bartholomew, 16; Daviess, 14;

Dekalb, 9; Delaware, 14; Henry, 11; Knox, 13; Marion, 140; Putnam, 28; Randolph, 15; Sullivan, 11; Vigo, 25; Wayne, 15.

September.—Four hundred and forty-six cases in 76 counties, with 118 deaths. In the corresponding month last year, 642 cases in 76 counties, with 144 deaths. By this comparison there is an improvement to be recorded. The disease existed in epidemic form in the following counties: Allen, 20 cases, with 2 deaths; Blackford, 10 cases, no deaths; Clinton, 13 cases, no deaths; Fountain, 8 cases, no deaths; Hancock, 8 cases, 2 deaths; Hendricks, 16 cases, 1 death; Jackson, 28 cases, 2 deaths; Johnson, 11 cases, 1 death; Knox, 18 cases, 2 deaths; Kosciusko, 10 cases, 1 death; Marion, 101 cases, 8 deaths; Montgomery, 10 cases, 3 deaths; Putnam, 17 cases, 4 deaths; St. Joseph, 29 cases, no deaths; Vigo, 18 cases, 5 deaths.

October.—Four hundred and sixty-four cases in 72 counties, with 129 deaths. In the corresponding month last year, 562 cases in 73 counties, with 140 deaths. It appears, therefore, that conditions were slightly better this October than last. The disease existed in epidemic form in the following counties: Allen, 15 cases; Clay, 7; Clinton, 9; Daviess, 8; Dearborn, 6; Elkhart, 10; Hancock, 12; Henry, 8; Jackson, 8; Marion, 96; Morgan, 7; Noble, 7; Putnam, 15; Pulaski, 8; Randolph, 8; St. Joseph, 32; Washington, 10.

November.—Four hundred forty-one cases in 70 counties, with 113 deaths. In the corresponding month last year, 440 cases in 60 counties, with 76 deaths. By this comparison, there is an increase of 48 per cent. The disease was epidemic in the following counties: Adams, 31; Allen, 18; Daviess, 14; Dearborn, 10; Elkhart, 7; Laporte, 28; Putnam, 13; Ripley, 12; St. Joseph, 14; Vanderburgh, 22.

December.—Two hundred forty-two cases, with 76 deaths, reported from 53 counties. In the corresponding month last year, 318 cases, with 69 deaths, in 47 counties. The disease was epidemic in Allen, 22 cases; Delaware, 49; Fayette, 15; and St. Joseph, 53. Marion County, the largest county in the State, reports but 9 cases and 8 deaths. It is plain to be seen that all the cases have not been reported. It is also true that none of the counties have reported all of their cases, and furthermore, not all cases have been properly diagnosed or discovered.

DIPHTHERIA.

Diphtheria caused 315 deaths in 1908. This is a decrease as compared with the annual average, 437, for the last nine years. November was the most fatal month and June the least fatal.

The tables giving the number of deaths by months and by ages, follow herewith.

DIPHTHERIA.

Deaths by Months, with Average for Last Nine Years.

Months.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	90	110	49	61	51	32	33	43	42	56
February.....	70	61	35	49	35	31	23	41	28	41
March.....	68	39	32	27	29	27	26	35	24	34
April.....	30	29	27	22	32	13	16	27	12	23
May.....	14	23	30	12	22	13	8	20	12	17
June.....	13	23	16	16	18	8	12	10	8	13
July.....	15	15	7	15	10	16	11	15	11	12
August.....	40	24	21	23	12	15	13	20	12	20
September.....	64	38	39	35	11	34	36	35	32	36
October.....	111	74	48	69	21	82	77	36	43	62
November.....	125	56	63	77	35	41	82	37	47	62
December.....	105	62	57	56	38	54	65	34	44	57
Totals.....	745	554	424	462	314	366	402	353	315	437

DIPHTHERIA.

Deaths by Ages, with Average for Last Nine Years.

Ages.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	52	60	51	50	28	23	26	20	21	36
1- 2 years.....	73	59	36	59	47	35	45	34	43	47
2- 3 years.....	106	65	61	56	33	48	51	35	54	56
3- 4 years.....	94	80	39	64	46	53	47	51	36	56
4- 5 years.....	6	53	45	46	22	41	58	30	23	43
5-10 years.....	230	143	122	141	99	114	124	127	90	132
10-15 years.....	70	51	46	28	26	28	35	32	23	37
15-20 years.....	24	23	14	9	5	10	10	7	9	12
20-25 years.....	4	7	1	3	1	7	1	8	3	4
25-30 years.....	1	3	1	.....	1	3	.....	3	3	1
30-35 years.....	2	1	1	2	1	1	.....	1	4	1
35-40 years.....	1	3	.....	.....	1	.....	1	2	3	1
40-45 years.....	.....	1	1	.....	.....	.....	2	.....	.....	.....
45-50 years.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....
50-55 years.....	.....	2	.....	.....	1	.....	1	.....	.....	.....
55-60 years.....	2	.....	.....	1	.....	2	.....	1	1	.....
60-65 years.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....
65-70 years.....	2	1	.....	1	.....	.....	.....	.....	.....	.....
75-80 years.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....

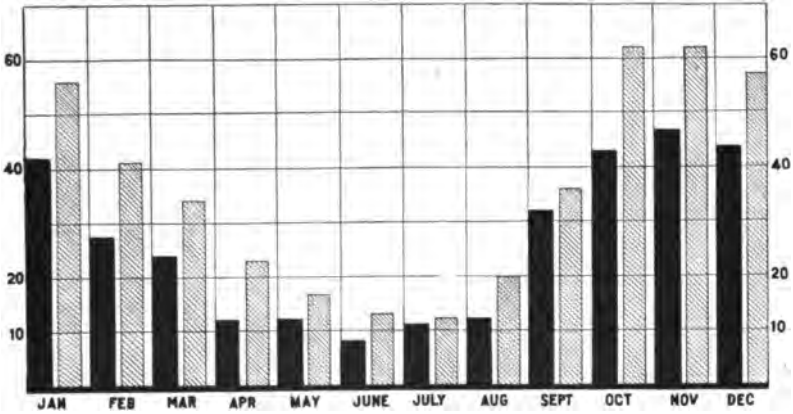
DIPHTHERIA DEATHS

BY MONTHS

■ — 1908

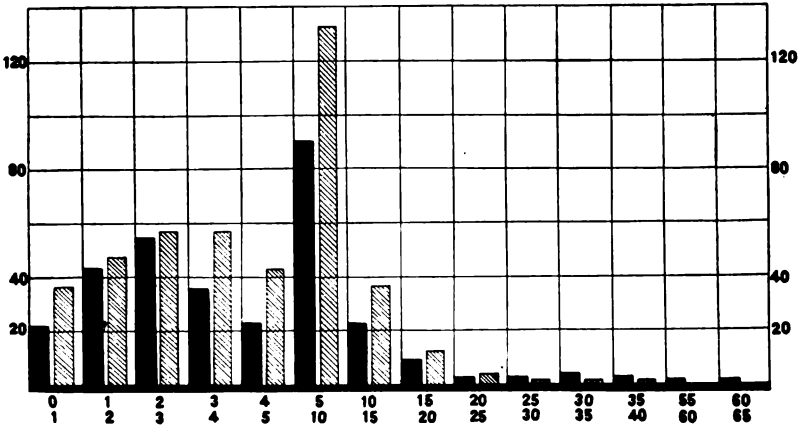
▨ — AVERAGE FOR LAST NINE YEARS

CHART 10



BY AGES

CHART 11



SCARLET FEVER.

Scarlet fever caused 95 deaths in 1908, or 40 less than the average annual number in the last nine years.

The tables given herewith and the graphic charts drawn from them show the scarlet fever situation in Indiana.

SCARLET FEVER

Deaths by Months, with Average for Last Nine Years

Months.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	17	24	22	22	24	18	11	6	13	17
February.....	15	18	19	13	24	11	9	9	17	15
March.....	17	27	18	10	33	20	12	18	10	18
April.....	16	18	11	9	22	21	7	9	15	14
May.....	12	9	5	4	15	11	7	5	5	8
June.....	9	12	3	6	9	4	10	3	5	6
July.....	2	5	6	13	4	14	7	10	4	7
August.....	1	5	6	8	6	6	3	5	1	4
September.....	5	4	8	13	7	5	6	3	6	6
October.....	14	3	19	16	12	5	8	7	4	9
November.....	13	10	24	18	17	11	14	8	5	13
December.....	20	14	9	34	19	7	7	8	10	14
Totals.....	141	149	150	166	192	133	101	91	95	135

SCARLET FEVER.

Deaths by Ages, with Average for Last Nine Years.

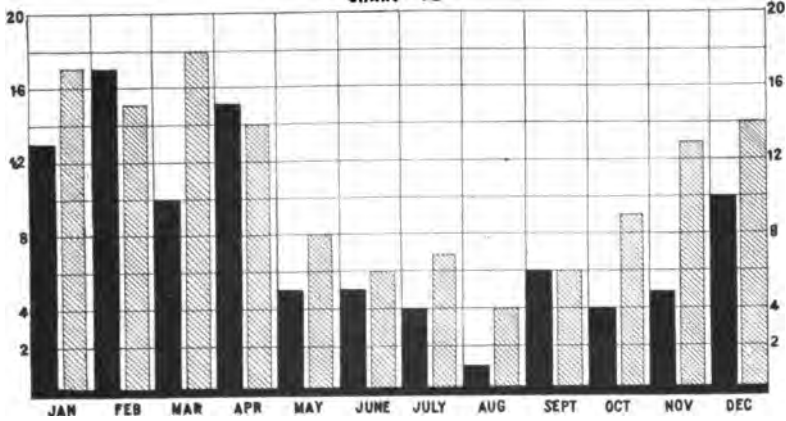
Ages.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	7	7	11	13	13	10	5	4	4	8
1-2 years.....	17	14	13	9	27	18	13	7	8	14
2-3 years.....	22	29	17	17	33	20	10	15	17	20
3-4 years.....	20	18	24	22	25	17	15	13	12	18
4-5 years.....	18	22	14	19	18	14	10	7	10	14
5-10 years.....	42	37	43	55	61	38	27	31	22	39
10-15 years.....	7	8	14	19	11	11	8	8	9	10
15-20 years.....	4	4	3	3	2	1	2	5	5	3
20-25 years.....	1	2	3	3	1	1	10	.....	2	2
25-30 years.....	.....	3	1	.....	.....	2	.....	1	.....	1
30-35 years.....	.....	1	1	1	.....	.....	1	.....	2	.....
40-45 years.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....
45-50 years.....	.....	1	.....	.....	1	1	.....	.....	.....	.....
50-60 years.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....

SCARLET FEVER DEATHS BY MONTHS

■ - 1908

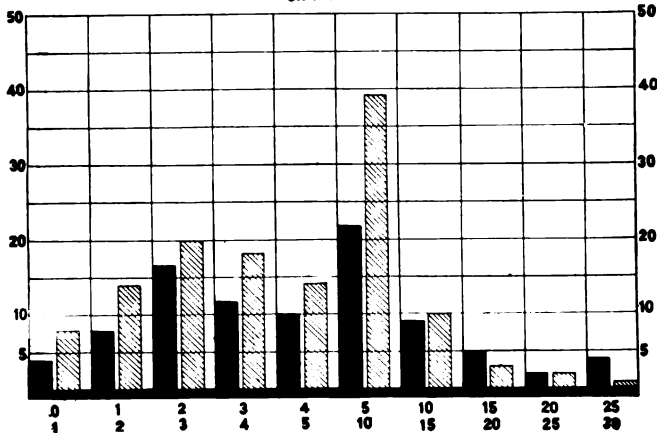
▨ - AVERAGE FOR LAST NINE YEARS

CHART 12



BY AGES

CHART 13



DIARRHOEAL DISEASES.

The deaths from diarrhoeal diseases under two years of age numbered 1,635, which is four less than in 1907. The deaths from this disease of persons two years of age and over, numbered 817.

The tables and charts show the status of the disease under the conditions and for the periods and ages named.

DIARRHOEAL DISEASES—UNDER FIVE YEARS OF AGE.

Deaths by Months, with Average for Last Nine Years.

Months.	1900	1901	1902	1903	1904	1905	1906	Under 2 Years.		Average.
								1907	1908	
January.....	19	14	15	11	29	26	28	34	39	24
February.....	11	12	14	22	30	30	25	32	33	23
March.....	21	17	14	20	33	36	29	35	34	26
April.....	13	26	21	17	24	22	39	18	48	25
May.....	32	19	29	25	29	35	42	35	39	31
June.....	111	81	116	83	54	116	71	81	59	89
July.....	480	468	455	323	307	359	321	396	322	381
August.....	627	600	569	475	498	499	484	503	420	505
September.....	426	393	337	275	344	343	447	280	292	349
October.....	198	167	130	140	204	186	232	160	204	180
November.....	80	64	56	36	49	54	66	40	53	58
December.....	21	15	23	22	28	24	39	25	32	25
Total.....	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,639	1,635	1,719

DIARRHOEAL DISEASES—FIVE YEARS OF AGE AND OVER.

Deaths by Months, with Average for Last Nine Years.

Months.	1900	1901	1902	1903	1904	1905	1906	Over 2 Years.		Average.
								1907	1908	
January.....	27	30	25	24	30	32	26	40	38	30
February.....	22	23	23	20	38	29	36	33	26	27
March.....	32	24	28	27	37	42	35	41	35	33
April.....	21	17	28	23	28	27	41	38	28	28
May.....	26	28	30	40	33	28	30	29	43	32
June.....	15	31	25	36	30	44	29	63	57	36
July.....	139	130	129	93	73	87	78	150	116	110
August.....	137	169	170	131	110	152	119	203	165	150
September.....	118	123	86	116	104	94	130	122	143	115
October.....	69	72	59	64	63	67	92	62	88	70
November.....	36	39	39	26	32	28	39	42	50	36
December.....	28	42	27	22	33	28	40	24	28	30
Total.....	668	727	669	622	611	658	695	847	817	701

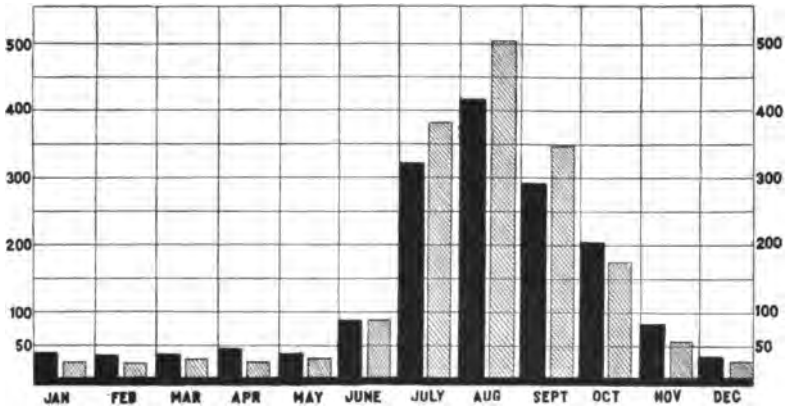
DIARRHOEAL DISEASES

BY MONTHS

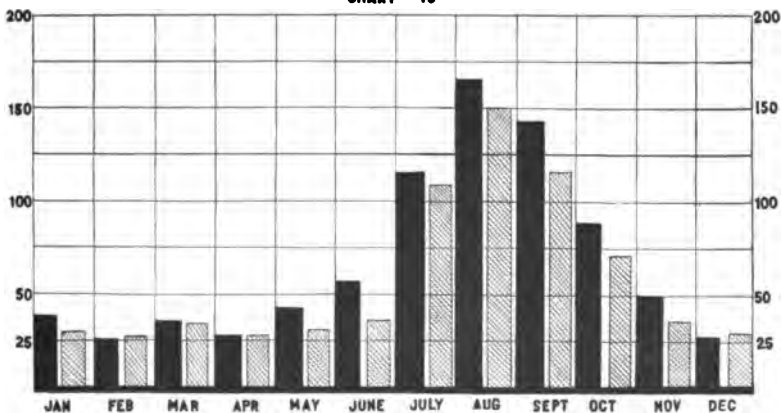
■ - 1908

▨ - AVERAGE FOR LAST NINE YEARS

UNDER TWO YEARS OF AGE
CHART 14



TWO YEARS AND OVER
CHART 15



DIARRHOEAL DISEASES.

Deaths by Ages, with Average for Last Nine Years.

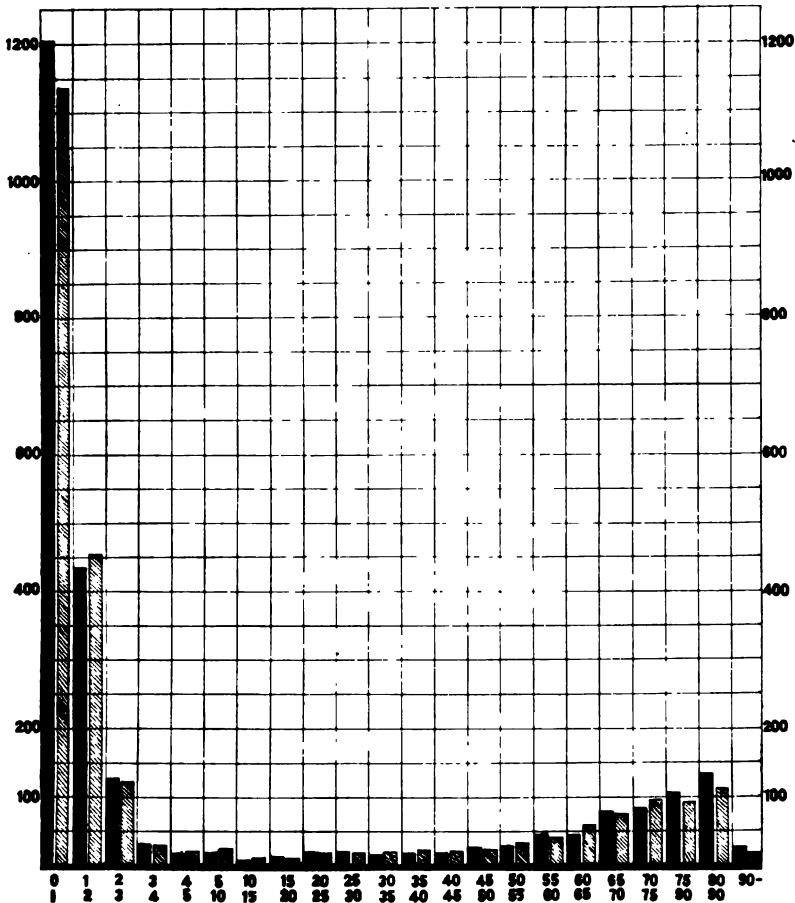
Ages.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	1,305	1,118	1,070	894	1,068	1,115	1,240	1,202	1,202	1,135
1- 2 years.....	534	513	533	421	384	406	417	437	433	453
2- 3 years.....	152	139	140	110	112	130	116	105	126	125
3- 4 years.....	44	28	34	19	40	36	31	33	34	33
4- 5 years.....	34	17	13	11	21	13	20	11	16	17
5-10 years.....	25	36	23	12	31	29	17	19	16	23
10-15 years.....	1	9	8	11	13	10	6	12	6	8
15-20 years.....	8	13	7	6	4	8	8	4	8	7
20-25 years.....	11	15	14	9	15	17	12	16	14	13
25-30 years.....	9	13	15	12	13	16	21	7	14	13
30-35 years.....	9	32	12	20	14	10	10	10	11	14
35-40 years.....	19	18	28	14	15	22	17	20	13	18
40-45 years.....	22	13	14	15	19	20	19	13	12	16
45-50 years.....	21	22	20	24	19	13	14	13	19	18
50-55 years.....	31	31	30	36	33	25	30	30	20	29
55-60 years.....	43	46	57	37	37	51	37	35	46	43
60-65 years.....	63	62	60	45	57	72	59	61	45	58
65-70 years.....	77	91	73	67	68	68	90	78	78	76
70-75 years.....	82	70	80	98	88	93	99	97	81	87
75-80 years.....	69	83	98	91	88	95	107	117	103	94
80-90 years.....	94	107	102	94	89	104	124	141	132	109
90 years and over.....		22	11	14	12	13	18	20	22	14

DIARRHOEAL DISEASES BY AGES

■ - 1908

▨ - AVERAGE FOR LAST NINE YEARS

CHART 16



INFLUENZA.

Influenza caused 867 deaths in 1908, which is a large increase as compared with the average (545) for the last nine years. The disease occurred in every county of the State. The tables and charts herewith show the status of the malady.

INFLUENZA.

Deaths by Months, with Average for Last Nine Years.

MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	53	269	60	31	45	114	53	71	172	96
February.....	70	349	84	51	90	221	44	159	316	153
March.....	95	180	51	87	146	151	48	234	167	120
April.....	101	128	37	60	70	37	30	51	70	65
May.....	34	42	15	37	20	15	7	52	40	29
June.....	19	12	4	10	7	7	2	14	13	9
July.....	12	8	7	7	2	5	4	7	9	7
August.....	4	10	3	9	5	2	2	4	14	5
September.....	1	3	7	3	1	4	3	4	5	3
October.....	13	5	8	7	4	4	8	2	4	6
November.....	8	12	8	10	18	12	11	17	22	13
December.....	11	30	17	26	26	21	12	51	35	26
Total.....	424	1,049	302	348	434	591	224	666	867	545

INFLUENZA.

Deaths by Ages, with Average for Last Nine Years.

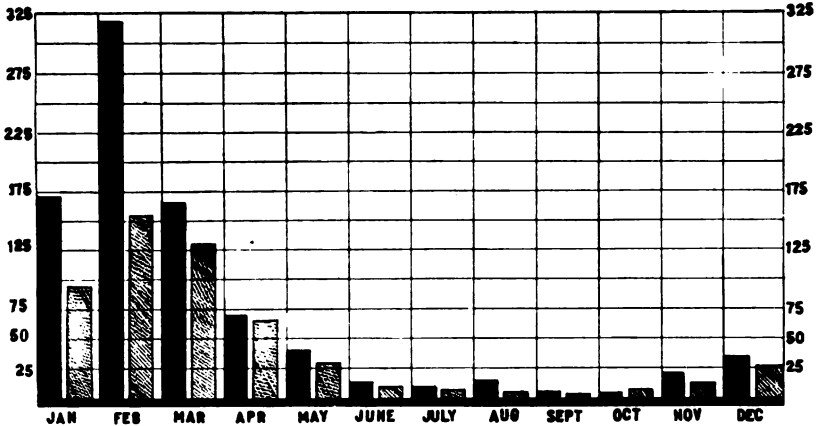
AGES.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	35	66	47	13	32	43	14	26	32	34
1-2 years.....	7	14	7	3	4	10	3	12	11	8
2-3 years.....	3	11	4	3	1	6	5	5	10	6
3-4 years.....	1	5	4	2	4	.....	2	3	6	2
4-5 years.....	2	4	4	2	.....	1	2	.....	1	1
5-10 years.....	7	11	9	2	3	5	2	4	10	6
10-15 years.....	2	6	4	6	7	4	3	6	10	5
15-20 years.....	3	12	3	3	6	7	4	11	16	7
20-25 years.....	5	20	4	4	3	16	3	11	12	8
25-30 years.....	13	22	2	5	8	3	.....	5	11	7
30-35 years.....	7	22	2	5	7	9	2	18	15	9
35-40 years.....	9	27	6	5	7	9	4	14	24	11
40-45 years.....	17	33	1	6	6	16	3	9	21	12
45-50 years.....	17	33	6	7	13	14	10	23	30	17
50-55 years.....	8	43	12	16	9	17	13	26	37	20
55-60 years.....	15	41	14	16	19	32	6	35	34	24
60-65 years.....	23	57	5	28	22	40	11	24	50	29
65-70 years.....	47	103	35	27	37	47	24	73	86	53
70-75 years.....	59	159	35	53	73	67	31	94	115	76
75-80 years.....	55	151	39	58	61	86	31	89	121	78
80-90 years.....	53	180	51	74	94	122	43	151	182	110
90 years and over.....	.....	26	7	9	15	23	8	23	21	14

INFLUENZA DEATHS BY MONTHS

■ - 1908

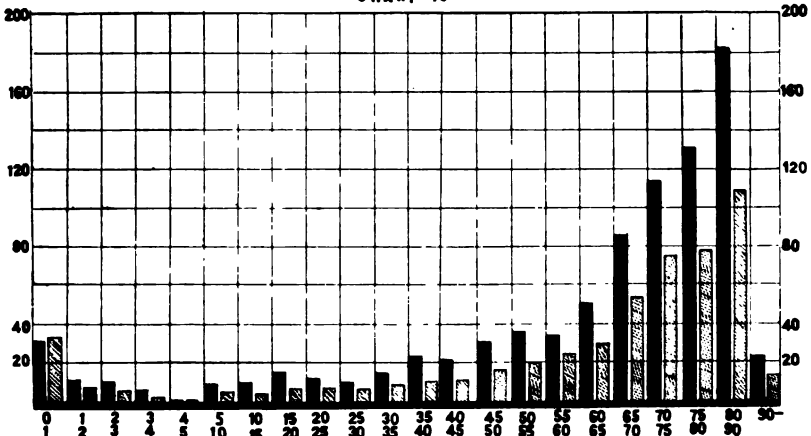
▨ - AVERAGE FOR LAST NINE YEARS

CHART 17



BY AGES

CHART 18



MEASLES.

We have to record 209 deaths from measles in 1908. This is 93 more than the annual average for the last nine years. Tables given below show the relationship by months and by certain age periods, for the last nine years.

MEASLES.

Deaths by Months, with Average for Last Nine Years.

MONTHS.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
January.....	2	14	2		28		2	7	8	7
February.....	2	22	5	4	31	1	2	10	57	15
March.....	5	37	26	6	52			28	52	23
April.....	25	37	5	12	50	2	7	40	47	25
May.....	27	31	14	10	29		4	51	24	21
June.....	7	10	4	7	9	1	3	31	11	9
July.....	5	7	7	4	6			23	2	6
August.....	4	2	5	3	3	1	1	5	2	3
September.....	2			6	2			2	1	1
October.....	1			4	2			4	1	1
November.....	2			6		1	2	3	3	1
December.....	3	1	1	11			2	9	1	3
Total.....	85	161	69	73	212	6	23	213	209	116

MEASLES.

Deaths by Ages, with Average for Last Nine Years.

AGES.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
Under 1 year.....	24	39	22	17	65	3	5	49	50	30
1-2 years.....	10	22	11	19	27		9	55	29	20
2-3 years.....	8	15	6	6	26	1	1	30	13	11
3-4 years.....	5	9	2	3	7			9	14	5
4-5 years.....	2	6	3	2	10		1	6	8	4
5-10 years.....	10	14	5	3	13			20	26	10
10-15 years.....	3	12		3	10			6	9	4
15-20 years.....	1	7	3	5	9		1	7	16	5
20-25 years.....	5	9	2	2	6		1	3	5	3
25-30 years.....	4	1	1	4	1		1	6	8	3
30-35 years.....	4	4	3	1	5		2	1	4	2
35-40 years.....	2	6		1	11		1	6	7	3
40-45 years.....	3	7	2	1	7			4	5	3
45-50 years.....	1	3	1	1	6			2	3	2
50-55 years.....	2	2	2	3	2	1		2	5	2
55-60 years.....		1								
60-65 years.....		2			1			3		
65-70 years.....			4	1	1			1	1	
70-75 years.....		1	1		1				3	
75-80 years.....		1			2			2	1	
80-90 years.....	1				2			1		
90 years and over.....			1	1						

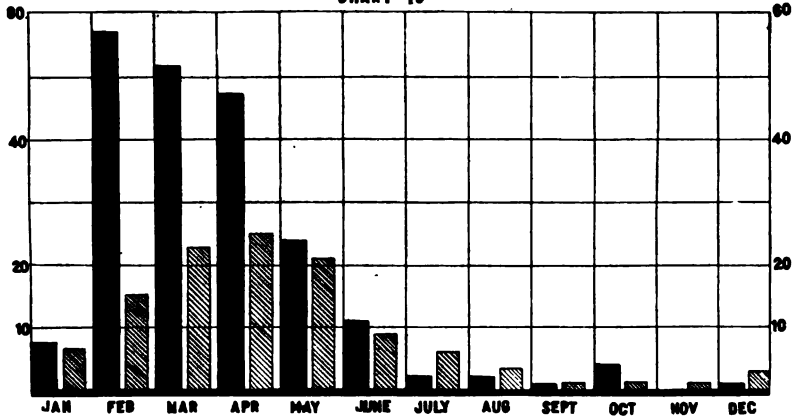
MEASLES DEATHS

BY MONTHS

■ - 1908

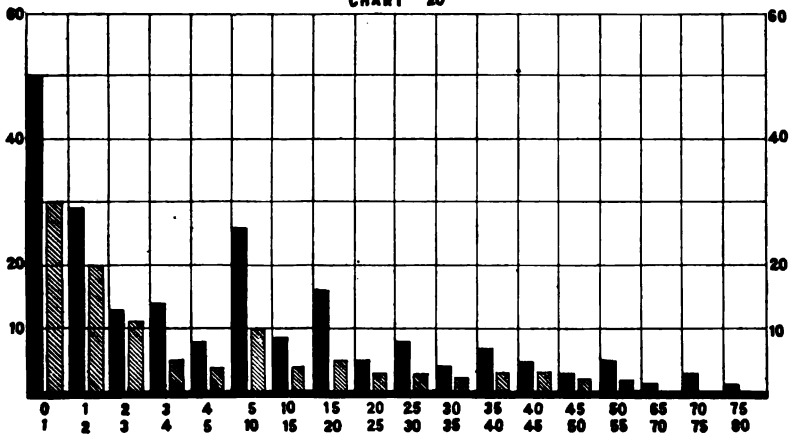
▨ - AVERAGE FOR LAST NINE YEARS

CHART 19



BY AGES

CHART 20



SMALLPOX.

Smallpox caused 10 deaths in 1908, and in 1907 there were 8. The deaths occurred in Carroll County, 1; Steuben, 1; Delaware, 1; Madison, 1; Marion, 3; Tippecanoe, 2; Clark, 1.

SMALLPOX.

Table Giving Number of Deaths by Months, with Average for Last Nine Years.

Months.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Total	Average.
January.....	1	2	4	51	8	7	.....	3	.....	76	8
February.....	4	2	2	55	5	11	.....	2	1	82	9
March.....	2	4	3	31	3	3	.....	.....	2	48	5
April.....	3	1	8	21	6	3	1	1	2	46	5
May.....	2	3	1	10	7	3	.....	1	.....	27	3
June.....	2	3	2	3	3	4	.....	1	3	21	2
July.....	3	1	15	4	6	3	1	.....	.....	33	3
August.....	.....	.....	1	14	3	.....	.....	.....	.....	18	2
September.....	2	1	7	2	17	.....	2	.....	.....	31	3
October.....	.....	2	10	.....	18	.....	3	.....	.....	33	3
November.....	.....	1	4	1	13	.....	.....	.....	.....	19	2
December.....	.....	1	18	3	8	1	1	.....	2	24	3
Total.....	19	21	75	195	97	35	8	8	10	468	52

MONTHLY ANALYSIS OF SMALLPOX.

January.—Two hundred forty cases reported from 32 counties, with no deaths. In the corresponding month last year 232 cases in 15 counties, with 3 deaths. The following counties reported the disease present: Allen 3 cases, Cass 1, Clark 1, Elkhart 7, Floyd 8, Fountain 2, Fulton 30, Grant 23, Hamilton 10, Harrison 2, Hendricks 5, Howard 8, Huntington 8, Johnson 1, Kosciusko 1, Lagrange 4, Lake 1, Madison 26, Marion 5, Marshall 6, Monroe 20, Noble 8, Pulaski 1, Randolph 1, Shelby 5, Steuben 1, St. Joseph 6, Tipton 5, Vigo 8, Wabash 23, Wayne 6, Wells 3.

February.—One hundred and twenty-two cases reported from 35 counties, with 1 death. In the corresponding month last year, 241 cases in 25 counties, with 1 death. The following counties reported the disease present: Adams 6 cases, Clark 8, Dearborn 1, Dekalb 2, Delaware 5 (1 death), Dubois 5, Elkhart 12, Floyd 2, Franklin 31, Fulton 1, Grant 15, Greene 3, Hancock 1, Hendricks 5, Henry 2, Howard 4, Jefferson 3, Johnson 1, Kosciusko 3, Laporte 2, Lawrence 4, Madison 16, Marion 13, Marshall 1, Monroe 27, Noble 10, Shelby 21, Steuben 14, St. Joseph 2, Tippecanoe 5, Tipton 4, Wabash 6, Wayne 2, Wells 8.

March.—Two hundred and eighty-four cases reported from 35 counties, with 2 deaths. In the corresponding month last year, 221 cases in 20 counties, with no deaths. The following counties reported the disease present: Adams 4 cases, Allen 1, Cass 1, Clark 16, Daviess 1, Delaware 4, Elkhart 11, Fayette 9, Grant 20, Green 4, Hancock 3, Howard 16, Huntington 45, Jackson 1, Jefferson 4, Johnson 46, Lagrange 1, Laporte 4, Lawrence 9, Madison 5 (with one death), Marion 18 (with one death), Marshall 2, Miami 1, Montgomery 1, Noble 3, Owen 1, Putnam 1, Shelby 3, Steuben 2, Tipton 17, Vanderburgh 1, Wabash 25, Wayne 12, Wells 1, Whitley 1.

April.—Three hundred and twenty-four cases with two deaths in thirty-five counties. In the corresponding month last year ninety-one cases in twenty counties, with one death. The following counties reported the disease present: Allen 2 cases, Bartholomew 1, Boone 1, Clark 12, Dearborn 3, Dekalb 2, Delaware 19, Elkhart 2, Fulton 19, Grant 13, Hendricks 1, Howard 15, Huntington 38, Jackson 3, Johnson 9, Knox 21, Laporte 2, Lawrence 12, Madison 5, Marion 46 and one death, Marshall 1 case, Miami 16, Morgan 2, Noble 9, Orange 1, Owen 4, Shelby 35 and one death, St. Joseph 1 case, Sullivan 9, Tippecanoe 3, Tipton 1, Wabash 14, Warrick 1, Wayne 15, Wells 1.

We have repeatedly predicted this miserable disease would continue to prevail so long as it could find any soil to grow upon. Mild smallpox is not dangerous, but we have to record every month one or more deaths, and we know almost every case and death could be prevented if the people would vaccinate.

May.—Two hundred and seventy-five cases reported in 33 counties, with no deaths. In the corresponding month last year, 119 cases reported in 31 counties, with one death. We are aware that probably not one-half of the cases were reported. In the southern part of Carroll county, from which county 51 cases are reported, we believe there must have been at least 150. The great number of mild cases, which are not recognized as smallpox and which have no physicians, account for this discrepancy. The counties in which the disease prevailed in epidemic form were: Carroll 51 cases reported, Clark 14 cases, Dekalb 9, Delaware 12, Grant 36, Knox 10, Marion 35, Steuben 30, Tippecanoe 10, and Vigo 14.

June.—There were reported 97 cases in 21 counties, with three deaths. The deaths occurred, 1 in Indianapolis, 1 in Jeffersonville and 1 in the country, Carroll county. We are well aware that all cases were not reported to us, for all were not discovered. Prob-

ably Carroll county had 100 or more cases. The counties in which the disease may be said to have prevailed in epidemic form were: Carroll 16 cases, 1 death; Clark 16 cases. The other counties having the disease were: Allen 6 cases, Boone 3, Dearborn 2, Dekalb 4, Delaware 2, Floyd 1, Fountain 4, Grant 6, Jackson 1, Jefferson 6, Marion 13, Newton 2, Noble 6, Parke 1, Porter 1, Scott 2, St. Joseph 6, Vanderburgh 1, Vigo 4.

July.—There were reported 65 cases in 13 counties, with no deaths. In the corresponding month last year, 74 cases in 21 counties, with no deaths. In the preceding month, 97 cases in 21 counties, with 3 deaths. The disease prevailed more than usual in the following counties: Clark 10 cases, Marion 28 cases, and St. Joseph 11 cases.

August.—Forty-five cases in 7 counties, with no deaths. In the corresponding month last year, 63 cases in 18 counties, with no deaths. The disease was reported present in Allen, 2, Clay 8, Decatur 2, Johnson 4, Marion 14, St. Joseph 3, Tippecanoe 2.

September.—Thirty-two cases in 8 counties, with no deaths. In the corresponding month last year, 23 cases in 7 counties, no deaths. We will make the usual monthly remark that very many cases of mild smallpox are unreported, first because many physicians are unable to diagnose mild smallpox, and also because many patients with the disease are not sick enough to consult a physician. The counties reporting smallpox were: Carroll 10 cases, Decatur 4, Jackson 1, Marion 8, Perry 1, St. Joseph 3, Tippecanoe 3, and Wayne 2.

October.—Fifty-four cases in 10 counties, with no deaths. In the preceding month, 32 cases in 8 counties, with no deaths. In the corresponding month last year, 75 cases in 7 counties, with no deaths. We again repeat the remark that very many cases of mild smallpox are not reported, first because many physicians are unable to diagnose mild smallpox, and also because many patients with the disease are not sick enough to consult a physician, and do not know what is the matter with them. The counties reporting smallpox were: Allen 1 case, Carroll 26, Clay 8, Dearborn 1, Elkhart 4, Madison 1, Marion 5, Sullivan 2, Tippecanoe 5, Vigo 1.

November.—Fifty-six cases in ten counties, with no deaths. In the corresponding month last year, 107 cases in 14 counties, with no deaths. The counties reporting smallpox present were: Benton 1 case, Boone 1, Elkhart 6, Hendricks 2, Tippecanoe 25, Tipton 1, Vigo 5, Wabash 3, Wayne 8.

December.—One hundred and twenty-eight cases reported in 23 counties, with 2 deaths. In the corresponding month last year, 207 cases in 18 counties, with no deaths. The two smallpox deaths which occurred during the month were in Tippecanoe county. The counties reporting smallpox present were: Allen 1, Bartholomew 1, Benton 3, Boone 1, Delaware 52, Elkhart 1, Franklin 1, Gibson 1, Grant 2, Hamilton 1, Harrison 1, Hendricks 3, Marion 1, Miami 1, Rush 24, Shelby 1, Spencer 1, St. Joseph 12, Tippecanoe 77, with 2 deaths; Tipton 1, Vigo 1, Warren 7, and Wayne 1.

VIOLENCE.

The violence deaths numbered 2,527, as against 2,464 in 1907. The term violence includes accidents, suicides and homicides. The accidental deaths numbered 2,021, as follows: Fractures, 22; dislocations, 3; accidental gunshot wounds, 61; injury by machinery, 34; injury in mines and quarries, 46; railroad accidents and injuries, 453; injury by horses and vehicles, 134; other accidental traumatisms, 456; burns and scalds, 206; burns and corrosive sublimate, 2; sunstroke, 26; freezing, 9; electric shock, 40; accidental drowning, 166; inanition (starvation), 15; absorption of deleterious gases (nonsuicidal), 44; other acute poisoning, 73; other external violence, 231. The accidental deaths in 1907 numbered 1,981.

The suicide deaths numbered 384, as follows, in 1908: Poison, 183; asphyxia, 8; hanging or strangulation, 37; drowning, 19; firearms, 112; cutting instruments, 15; jumping from high places, 1; crushing, 7; other suicides, 2. The suicide deaths in 1907 numbered 361.

The homicides numbered 122 for 1908, and also for 1907.

No deaths from mob violence in 1908, and none since 1905.

MONTHLY RECORD OF VIOLENCE DEATHS.

January.—The deaths by violence numbered 195. Ninety of these occurred in the cities and 105 in the country. In the corresponding month last year there were 140 deaths by violence, 73 occurring in cities and 67 in the country. Of the violence deaths, 7 were murders, 31 suicides and the remainder accidents. Of the murders, 6 were males, and 1 female, and the methods were: Gunshots, 2 males, 1 female; hatchet wounds, 2 males; blunt instruments, 2 males. Of the suicides, 23 were males and 8 females. The methods chosen for self-destruction were carbolic acid 10, morphine 2, arsenic 3, other poisons 4, gunshots 6, chloroform and artificial gas 2, hanging, drowning and cutting throat 4. Of the accidents, 118 were males, and 39 females. Steam railroads killed 30, trolley-cars 4, automobiles 1, fractures and crushing injuries 20, machinery and mining 5, burns and scalds 29, gunshots 9, drowning 4, asphyxiation and strangulation 5, suffocation 3, falls 26, electricity 2, accidents of childbirth 3, swallowing of foreign substances by children 3, horses and vehicles 3, and by other methods 11.

February.—The deaths by violence numbered 146. In the corresponding month last year, 195. Of the 146 deaths by violence, 7 were murders, 23 suicides, and the remainder accidents. Of the murders, 2 were caused by gunshots, 3 by stabbing, and 2 by blunt instruments. Of the suicides, 9 were by gunshots, 3 by cutting throat, 2 by drowning, 2 hanging, 3 chloroform, 2 paris green, 2 strychnia. Of the accidental deaths, steam railroads caused 30, street cars and interurbans 4, crushing injuries 13, machinery 1, mining 7, falls 13, drowning 3, gunshots 4, burns and scalds 13, horses and vehicles 3, accidents at birth 4, suffocation 3, strangulation 5, ptomaine poisoning 4, other poisons 4, electricity 2, frozen to death 2, not named 2.

March.—The deaths by violence numbered 154. In the corresponding month last year, 166. Of the deaths by violence, 5 were murders, 4 males and 1 female. One murder was by gunshot, 2 by cutting throat and 1 suffocation (infanticide). Suicides numbered 27, 18 males and 9 females; the methods chosen were gunshots 8, stepping in front of railroad trains 2, drowning 2, cutting throat 2, carbolic acid 7, different poisons 6. Of the 123 accidental deaths, 26 were females, 97 males; steam railroads caused 19 deaths, street car and interurbans 7, falls and crushing injuries 31, burns and scalds 9, gunshots 2, drowning 6, horses and vehicles 4, machinery and mining 12, automobiles 1, various poisons 5, suffocation and strangulation 8, lockjaw 2, freezing 1, electricity 5, accidents at birth 6, powder explosions 2.

April.—The deaths by violence numbered 154; in the corresponding month last year, 149. Of the deaths by violence, 111 were males, 43 females. Of the males, 84 lost their lives by accident, 4 by murder, 24 by suicide. Of the females, 2 were murders, 31 killed by accident and 10 were suicides. The total number of suicides, 33. The methods chosen for self-destruction were: Carbolic acid 9 (6 males and 3 females), gunshots 9 (all males), drowning 2 (male 1, female 1); throwing themselves under railroad trains 2 (male 1, female 1); arsenic and other poisons 11 (male 6, female 5). The murders numbered 6 (4 males and 2 females). Of the accidental deaths, the steam railroads caused 22 deaths, street cars and interurbans 5, automobiles 1, crushing injuries by machinery and in other ways 15, burns and scalds 16, gunshots 2, drowning 10, falls 10, strangulation 2, asphyxiation and suffocation 11, ptomaine poisoning 2, morphine and other poisons 3, horses and vehicles 5, and other causes 11.

May.—The deaths by violence numbered 221. In the corresponding month last year, 180. Of the deaths by violence, 169 were males and 51 females. The murders numbered 24, females 4, males 20. Suicides, 41, 34 males and 7 females. Methods chosen were: Hanging 8, males 7, females 1; gunshots 8, all males; illuminating gas 3, males; railroad trains 3, males; carbolic acid 13, males 9, females 4; arsenic and strychnine 6, 4 males, 2 females.

Accidents.—Steam railroads 33, street cars and interurbans 4, fractures of bones 25, gunshots 3, drowning 23, burns and scalds 20, machinery and mining 3, falls 13, asphyxiation and strangulation 8, lightning and electricity 5, poisons 4, horses and vehicles 8, explosives 2, accidents at birth 3, suffocation 2, ptomaine poisoning 2.

June.—Deaths by violence numbered 194. In the corresponding month last year, 184. Of the deaths by violence, the males numbered 157 and females 37. The murders numbered 8, suicides, 34; accidents, 152. Of the murders, 4, all males, were by gunshots, 3 were by cutting and stabbing, 2 of them males and 1 female; 1 female by drowning. Of the suicides, 2 were by drowning, 9 by gunshots, 4 by hanging, 2 by cutting throat, 12 by carbolic acid and 5 by other poisons. Of the accidental deaths, steam railroads caused 25, street cars and interurbans 5, fracture of skull and other bones 7, burns and scalds 9, drowning 32, gunshots 4, horses and vehicles 16, falls 13, suffocation 10, accidents of birth 2, contusions and crushing injuries 2, sunstrokes 6, ptomaine poisoning 3, carbolic acid 2, lightning and electricity 6, automobiles 3, tetanus 3, mining 3, blood poisoning 1.

July.—The deaths from violence number 207. In the corresponding month last year, 225, and in the preceding month, 194. Of the 207 deaths by violence, 10 were murders, 26 suicides, 171 accidents. Of the murders, 7 were males and 3 females. The methods used were: Gunshot 7, cutting 2, drowning 1. Of the suicides, 23 were males and 3 females. The methods used were, gunshot 12, hanging 2, drowning 3, carbolic acid 6, strychnia 2, cutting 2. Of the 171 accidental deaths, railroads caused 45, street cars and interurbans 2, fractures 12, gunshot 5, burns and scalds 11, drowning 28, lightning 7, horses and vehicles 12, machinery 4, sunstroke 9, falls 17, and the remainder by various means.

August.—Deaths from violence, 220. In the corresponding month last year, 186. In the preceding month, 207. Of the deaths by violence, 8 were murders, 32 suicides and the remainder acci-

dental. Of the murders, 6 were males and 2 females. Four were murdered by gunshots, 2 by stabbing and cutting, 1 by carbolic acid and 1 by hemorrhage purposely produced at birth. Of the 32 suicides, 7 were females and 25 males. Eight males chose gunshots, 5 hanging, 2 drowning, 1 arsenic. Seven males and 4 females chose carbolic acid, 3 females chose chloroform, and 1 male and 1 female chose morphine. Of the accidental deaths, 39 were caused by steam railroads, 4 by street cars and interurbans, 2 by automobiles, 17 by fractures and crushing injuries, 14 by burns and scalds, 8 by gunshots, 32 by drowning, 13 by falls, 13 by horses and vehicles, 6 by lightning and electricity, 5 by poisoning, 3 by sunstroke, and the remainder by various means.

September.—Deaths from violence numbered 217. In the corresponding month last year, 199. The murders numbered 19, suicides 36, accidents 162. Of the murders, 12 were males and 7 females. Eight males and 7 females were murdered with firearms, 1 male by cutting, 2 by blunt instruments and 1 forcibly drowned. Of the suicides, 24 were males and 12 females. The methods chosen were carbolic acid, 6 males, 6 females; gunshots, 9 males and 2 females; hanging, 3 males, 2 females; drowning, 1 male, 1 female; cutting throat, 3 males; poisons, 2 males, 1 female. Of the accidental deaths, steam railroads caused 35; street cars and interurbans, 8; machinery, 6; burns and scalds, 11; drowning, 2; gunshots, 4; falls, 34; horses and other animals, 12; asphyxiation, 8; poisons, 4; mining, 4; electricity, 3; freezing, 3, and the remainder by various methods.

October.—Deaths from violence numbered 185. Of this number, 4 were murders, 27 suicides, and the remainder accidents. All of the murdered persons were males, and the method of murder was shooting. Of the suicides, 6 were females and 21 males. The methods used were: Gunshots, 7 males, 1 female; carbolic acid, 9 males, 3 females; hanging, 2 males, 1 female; poisoning, 2 males, 1 female; throwing himself from high window, 1 male. Of the accidental deaths, 29 were caused by steam railroads, 26 males, 3 females; 6 caused by street cars and interurbans, 5 males, 1 female; automobiles, 2 males; various fractures of bones, 10; machinery, 2; burns and scalds, 26; crushing injuries, 6; dynamite, 2; gunshots, 8; drowning, 6; falls, 10; horses and vehicles, 16; mining, 8; opium poisoning, 3; ptomaine poisoning, 4; wood alcohol poisoning, 1; suffocation, 9; electricity, 1, and the remainder by various means.

November.—Deaths from violence numbered 176, 93 occurring in the cities, and 83 in the country. Of the total number, 7 were murders, 25 suicides, and the remainder accidental. Of the 7 murders, 1 was a female. Six were killed by gunshots, and 1 by a blow, fracturing the skull. Of the 25 suicides, 5 were females. The methods were: Gunshots, 8 males, 3 females; carbolic acid, 6 males and 2 females; poisons, 3 males; asphyxiation by gas, 1 male; cutting throat, 1 male; drowning, 1 male.

Of the accidental deaths, steam railroads killed 25; street cars and interurbans, 5; automobiles, 3; fracture of skull, 5; fracture of femur and other bones, 9; falls, 18; horses and vehicles, 8; burns and scalds, 22; gunshots, 11; drowning, 1; crushing injuries, 9; suffocation and asphyxiation, 10; strangulation, 4; carbolic acid, 1; strychnia, 2; and the remainder by various methods.

December.—Deaths from violence numbered 140. In the corresponding month last year, 184. The causes were: Murder, 7, all males. The murders were accomplished by gunshot, 3; cutting and stabbing, 2; clubs or blunt instruments, 2. Suicides numbered 27; males 20, and females 7. The methods chosen were gunshot, 5; carbolic acid, 16; hanging, 2; strychnine, 2; chloroform, 1; and artificial gas, 1.

Of the accidental deaths steam railroads caused 30, interurbans, 2; street cars, 2; crushing injuries, 35; burns and scalds, 14; drowning, 2; horses and vehicles, 4; mines, 3; boiler explosion, 1; laudanum, 2; carbolic acid, 8; asphyxiation, 5; and the remainder by various causes.

CANCER.

Cancer is an increasing cause of death in Indiana. The cancer deaths for 1908 numbered 1,739, and for 1907 numbered 1,513. The forms were:

CANCER AND OTHER MALIGNANT TUMORS.

Of the buccal cavity	77
Of the stomach and liver.....	696
Of the peritoneum, intestines and rectum.....	149
Of the female genital organs.....	291
Of the breast	156
Of the skin	141
Of other organs	229
<hr/>	
Total	1,739

MONTHLY ANALYSIS OF DISEASE PREVALENCE.

January.—Reports show more sickness and more deaths in January, 1908, than in January, 1907. Influenza, pneumonia, bronchitis and tonsilitis lead as the most prevalent diseases. In January, 1907, pneumonia stood fourth in area of prevalence, and this January it stands second. It will be noticed how the respiratory diseases lead in the cold weather, due to living so much in the house. The order of prevalence was as follows: Influenza, pneumonia, bronchitis, tonsilitis, rheumatism, scarlet fever, measles, diphtheria and membranous croup, typhoid fever, pleuritis, smallpox, chickenpox, diarrhea, erysipelas, intermittent fever, whoopingcough, inflammation of bowels, dysentery, typho-malaria fever, puerperal fever, cerebrospinal meningitis, cholera morbus, cholera infantum.

February.—The reports show a slight increase in death and disease in February, 1908, as compared with the preceding February. Influenza is reported as the most prevalent disease, and then follow pneumonia, bronchitis and tonsilitis, all of them affections of the respiratory tract. The order of prevalence was as follows: Influenza, pneumonia, bronchitis, tonsilitis, rheumatism, measles, pleuritis, scarlet fever, smallpox, typhoid fever, diphtheria and membranous croup, diarrhea, whooping-cough, erysipelas, chickenpox, intermittent fever, inflammation of bowels, cerebrospinal meningitis, cholera morbus, dysentery, typho-malaria fever, puerperal fever, cholera infantum.

March.—The reports show a slight decrease in death and disease in March, 1908, as compared with the preceding March. Influenza and bronchitis are reported as the most prevalent diseases, and this was true in the preceding month, and also in the corresponding month last year. Now that spring is coming, with its milder temperature and more open air life, the respiratory diseases will materially decrease and April will make a better showing in this respect. The order of disease prevalence was as follows: Influenza, bronchitis, rheumatism, measles, pneumonia, tonsilitis, scarlet fever, smallpox, typhoid fever, pleuritis, diarrhea, diphtheria and membranous croup, chickenpox, whooping cough, erysipelas, inflammation of bowels, intermittent and remittent fever, dysentery, typho-malaria fever, cerebrospinal meningitis, cholera morbus, puerperal fever, cholera infantum. Scarlet fever

in a mild form is prevailing in numerous places in the State, but the mortality has been very low, ten deaths. Measles also has prevailed extensively, with forty-seven deaths; many schools were closed on account of this disease.

April.—The reports for April show a greater number of deaths and a higher death rate than in the corresponding month last year. There were 2,954 deaths, rate 13.2, in April, 1908; and in April, 1907, 2,813 deaths, rate 12.7. As predicted last month, there is a marked decrease in sickness and death from respiratory diseases. As soon as winter ends and the people commence to live more out of doors then coughs, colds, pneumonia, influenza and all respiratory diseases markedly decrease. Pneumonia deaths in March numbered 463 and in April 332, a decrease of 131 or almost 30 per cent. Influenza deaths fell from 156 in March to 81 in April, a decrease of 48 per cent. It is apparent from these facts, that living too much indoors is a dangerous and expensive thing to do. The most prevalent disease in April was rheumatism. In the corresponding month last year tonsilitis was the most prevalent. The order of disease prevalence for April was as follows: Rheumatism, bronchitis, tonsilitis, measles, influenza, pneumonia, smallpox, typhoid fever, pleuritis, scarlet fever, intermittent and remittent fever, whooping cough, diarrhea, diphtheria and membranous croup, erysipelas, inflammation of bowels, chickenpox, puerperal fever, typho-malaria fever, cholera morbus, dysentery, cerebrospinal meningitis, cholera infantum.

May.—The reports for May show a lower death rate than for the corresponding month last year. Pneumonia shows a remarkable decrease over the same month last year, the deaths being 109 less. It is, indeed, remarkable that there should be almost 50 per cent more deaths from pneumonia in May, 1907, than in May, 1908. The decrease in respiratory diseases each year appears when outdoor life begins. As in the preceding month, rheumatism was the most prevalent disease. In the corresponding month last year measles was most prevalent and rheumatism second. The order of disease prevalence for May is as follows: Rheumatism, tonsilitis, bronchitis, measles, whooping cough, smallpox, intermittent fever, diarrhea, typhoid fever, influenza, pneumonia, pleuritis, scarlet fever, inflammation of bowels, dysentery, cholera infantum, diphtheria and membranous croup, chickenpox, cholera morbus, erysipelas, typho-malaria fever, cerebrospinal meningitis, puerperal fever.

June.—The reports for June show a lower death rate (10.7) than in the corresponding month last year (11.3). There was a remarkable decrease in pneumonia deaths, the figures being, respectively, 96 for June, 1908, and 151 for the preceding June. As in the two preceding months, rheumatism was reported as the most prevalent disease. In the corresponding month last year measles was reported as most prevalent. The order of disease prevalence for June is as follows: Rheumatism, diarrhea, tonsilitis, bronchitis, typhoid fever (enteric), cholera morbus, whooping cough, measles, cholera infantum, inflammation of the bowels, dysentery, intermittent and remittent fever, diphtheria and membranous croup, scarlet fever, smallpox, erysipelas, influenza, pneumonia, pleuritis, chickenpox, puerperal fever, typho-malaria fever, cerebrospinal meningitis.

July.—Diarrhea was reported as the most prevalent disease. This was also the case in the corresponding month last year. The number of deaths under five years of age caused by diarrhea were 312, and in the corresponding month last year 415. Pneumonia falls to eighteenth in area of prevalence owing to the outdoor life during the hot weather. Pneumonia is an indoor disease. The order of disease prevalence for July is as follows: Diarrhea, cholera morbus, dysentery, cholera infantum, tonsilitis, rheumatism, fever, typhoid (enteric), bronchitis, intermittent and remittent fever, inflammation of bowels, whooping-cough, scarlet fever, diphtheria and membranous croup, measles, smallpox, typho-malaria fever, pleuritis, pneumonia, cerebrospinal meningitis, influenza, erysipelas, puerperal fever, chickenpox.

August.—Diarrhea, as in July, was reported the most prevalent disease. Typhoid fever, which stood seventh in July, stands second this month. Cholera infantum, cholera morbus and dysentery were in the order named, and all were productive of much loss in life, money and comfort, and all were preventable. Rheumatism, which is mostly a disease of digestion and overfeeding, prevailed extensively, 51 per cent of observers reporting it. Tonsilitis and bronchitis prevailed unusually for this time of year. Influenza, pleuritis and pneumonia were not very prevalent, being reported by only 14 per cent of the observers. There were no deaths from smallpox. The order of disease prevalence was as follows: Diarrhea, typhoid fever, cholera infantum, cholera morbus, dysentery, rheumatism, tonsilitis, bronchitis, intermittent and remittent fever, inflammation of bowels, diphtheria and membranous croup, scarlet

fever, typho-malaria fever, influenza, pleuritis, whooping-cough, pneumonia, cerebrospinal meningitis, measles, erysipelas, smallpox, puerperal fever, chickenpox.

September.—Typhoid fever was reported as the most prevalent disease. It stood second in the preceding month. It stood first in September, 1907. Despite the warnings and teachings of the health authorities, it remains true this year, as ten years ago, that typhoid fever leads in prevalence beginning in September. We greatly wish the people would listen and learn and do those things which are necessary to keep from having this filthy disease. The order of disease prevalence was as follows: Typhoid fever (enteric), diarrhea, tonsilitis, bronchitis, rheumatism, cholera infantum, intermittent and remittent fever, cholera morbus, dysentery, diphtheria and membranous croup, pleuritis, influenza, scarlet fever, pneumonia, inflammation of the bowels, erysipelas, typho-malaria fever, smallpox, whooping-cough, cerebrospinal meningitis, chickenpox, measles, puerperal fever.

October.—Typhoid fever was reported the most prevalent disease. It occupied the same position in the preceding month, and also in the corresponding month last year. Despite the warnings and teachings of the health authorities, it remains true this year, as for the last ten years, typhoid fever leads in prevalence in October. The order of disease prevalence was as follows: Typhoid fever (enteric), tonsilitis, bronchitis, rheumatism, diphtheria and membranous croup, diarrhea, scarlet fever, intermittent fever, influenza, pneumonia, pleuritis, dysentery, typho-malaria fever, inflammation of bowels, cholera infantum, whooping-cough, cholera morbus, erysipelas, smallpox, puerperal fever, chickenpox, measles, cerebrospinal meningitis.

November.—Tonsilitis was reported the most prevalent disease. Typhoid fever was reported the most prevalent in the preceding month. The order of disease prevalence was as follows:

Tonsilitis, bronchitis, typhoid fever, rheumatism, diphtheria and croup, influenza, pneumonia, scarlet fever, pleuritis, intermittent fever, diarrhea, typho-malaria fever, chickenpox, erysipelas, inflammation of bowels, whooping-cough, dysentery, cholera infantum, cholera morbus, smallpox, puerperal fever, cerebrospinal meningitis, measles.

December.—Tonsilitis was reported as the most prevalent disease. Bronchitis was the most prevalent in the corresponding month last year. The order of disease prevalence was as follows:

Tonsilitis, rheumatism, bronchitis, influenza, scarlet fever, pneumonia, diphtheria, membranous croup, typhoid fever (enteric), pleuritis, diarrhea, intermittent and remittent fever, chickenpox, smallpox, erysipelas, measles, whooping-cough, inflammation of bowels, typho-malaria fever, cerebrospinal meningitis, cholera infantum, puerperal fever.

TABLES

OF

ANNUAL STATISTICAL REPORT

FOR THE YEAR 1908.

TABLE 1.

*Deaths in Indiana During the Year Ending December 31, 1908,
Statistically Classified by the International System, with Rates Per
100,000 Population, Based Upon School Census of 1908 Multi-
plied by $3\frac{1}{2}$ —2,730,144.*

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
I. GENERAL DISEASES—EPIDEMIC.			
1	Typhoid fever.....	885	32.4
2	Exanthematous typhus.....		
3	Recurrent fever.....		
4	Intermittent and malarial fever.....	83	3.0
5	Variola or smallpox.....	10	.3
6	Measles.....	209	7.6
7	Scarlatina.....	95	3.4
8	Whooping cough.....	416	15.2
9	Croup.....	18	.6
9a	Diphtheria.....	297	10.8
10	Influenza.....	867	31.7
11	Miliary fever.....		
12	Asiatic cholera.....		
13	Cholera nostras.....	18	.6
14	Dysentery.....	245	8.9
15	Bubonic plague.....		
16	Yellow fever.....		
17	Leprosy.....		
18	Erysipelas.....	86	3.1
19	Other epidemic diseases.....	1	.03
20	Purulent septicoemia and infection.....	95	3.4
21	Glanders and farcy.....		
22	Malignant pustule and anthrax.....	2	.07
23	Rabies.....	5	.1
24	Actinomycosis, trichinosis, etc.....	2	.07
25	Pellegra.....		
26	Tuberculosis of the larynx.....	48	1.7
27	Tuberculosis of the lungs.....	3,777	138.3
28	Tuberculosis of the meninges.....	205	7.5
29	Abdominal tuberculosis.....	275	10.0
30	Pott's disease.....	29	1.0
31	Cold abscess.....	2	.07
32	White swelling.....	30	1.0
33	Tuberculosis of other organs.....	70	2.5
34	General tuberculosis.....	91	3.3

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
35	Scrofula.....	13	.4
36	Syphilis.....	137	5.0
36a	Soft chancre.....	4	.1
37	Gonorrhea (5 years and over).....	4	.1
38	Gonorrhea* (under 5 years).....	3	.1
39	Cancer and other malignant tumors of the buccal cavity.....	77	2.8
40	Cancer and other malignant tumors of the stomach and liver.....	696	25.4
41	Cancer and other malignant tumors of the peritoneum intestines and rectum.....	149	5.4
42	Cancer and other malignant tumors of the female genital organs.....	201	10.6
43	Cancer and other malignant tumors of the breast.....	156	5.7
44	Cancer and other malignant tumors of the skin.....	141	5.1
45	Cancer and other malignant tumors of other organs.....	239	8.3
46	Other tumors.....	23	.8
47	Acute articular rheumatism.....	80	2.9
48	Chronic rheumatism and gout.....	94	3.4
49	Scurvy.....	1	.03
50	Diabetes.....	290	10.6
51	Exophthalmic goitre.....	25	.9
52	Addison's disease.....	9	.3
53	Leukemia.....	45	1.6
54	Anemia chlorosis.....	86	3.1
55	Other general diseases.....	28	1.0
56	Alcoholism, acute and chronic.....	83	3.0
57	Chronic lead poisoning.....	3	.1
58	Other chronic poisonings (occupational).....	2	.07
59	Other chronic poisonings.....	10	.3
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
60	Encephalitis.....	55	2.0
61	Simple meningitis.....	264	9.6
61a	Epidemic cerebro-spinal meningitis.....	154	5.6
62	Progressive locomotor ataxia.....	56	2.0
63	Other diseases of the spinal cord.....	173	6.3
64	Congestion and hemorrhage of the brain.....	1,695	62.0
65	Softening of the brain.....	98	3.5
66	Paralysis, cause unspecified.....	399	14.6
67	General paralysis.....	195	7.1
68	Other forms of insanity.....	97	3.5
69	Epilepsy.....	145	5.3
70	Convulsions (non puerperal) 5 years and over.....	11	.4
71	Convulsions, under 5 years.....	114	4.1
72	Tetanus.....	60	2.1
73	Chorea.....	11	.4
74a	Other diseases of the brain.....	90	3.2
74b	Other diseases of the nervous system.....	59	2.1
75	Diseases of the eye and its annex.....	4	.1
76	Diseases of the ear.....	14	.5
III. DISEASES OF THE CIRCULATORY SYSTEM.			
77	Pericarditis.....	46	1.6
78	Acute endocarditis.....	197	7.2
79	Organic diseases of the heart.....	3,534	129.4
80	Angina pectoris.....	263	9.6
81	Diseases of the arteries, atheroma, aneurism, etc.....	333	12.1
82	Embolism and thrombosis.....	70	2.5
83	Diseases of the veins (varices, hemorrhoids, phlebitis, etc).....	16	.5
84	Diseases of the lymphatic system (lymphangitis, etc.).....	4	.1
85	Hemorrhages.....	34	1.2
86	Other diseases of the circulatory system.....	2	.07

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
IV. DISEASES OF THE RESPIRATORY SYSTEM.			
87	Diseases of the nasal fossae	3	.1
88	Diseases of the larynx	36	1.4
89	Diseases of the thyroid body	10	.3
90	Acute bronchitis	289	8.7
91	Chronic bronchitis	213	7.8
92	Broncho-pneumonia	676	24.7
93	Pneumonia	1,698	62.0
94	Pleurisy	57	2.0
95	Congestion and apoplexy of the lungs	148	5.4
96	Gangrene of the lungs .....	..	..
97	Asthma	79	2.8
98	Pulmonary emphysema	5	.1
99	Other diseases of the respiratory system (phtisis excepted)	59	2.1
V. DISEASES OF THE DIGESTIVE SYSTEM.			
100	Diseases of the mouth and adnexa	25	.9
101	Diseases of the pharynx	34	1.2
102	Diseases of the esophagus	3	.1
103	Ulcer of the stomach	81	2.9
104	Other diseases of the stomach (cancer excepted)	606	22.1
105	Diarrhoea and enteritis (under 2 years)	1,614	59.1
105a	Chronic diarrhoea (under 2 years)	21	.7
106	Diarrhoea and enteritis (2 years and over)	554	20.2
107	Intestinal parasites	3	.1
108	Hernia and intestinal obstruction	300	10.9
109	Other diseases of the intestines	112	4.1
110	Acute yellow atrophy of the liver	11	.4
111	Echinocystic tumors of the liver .....	..	..
112	Cirrhosis of the liver	247	9.0
113	Biliary calculi	81	2.9
114	Other diseases of the liver	179	6.5
115	Diseases of the spleen	5	.1
116	Simple peritonitis (non-puerperal)	99	3.6
117	Other diseases of the digestive system (cancer and tuberculosis excepted)	5	.1
118	Appendicitis and abscess of the iliac fossae	248	9.0
VI. DISEASES OF THE GENITO-URINARY SYSTEM.			
119	Acute nephritis	234	8.5
120	Bright's disease	1,420	52.0
121	Other diseases of the kidneys and their adnexa	65	2.3
122	Calculi of the urinary tract	9	.3
123	Diseases of the bladder	126	4.6
124	Diseases of the urethra, urinary abscess, etc	11	.4
125	Diseases of the prostate	79	2.8
126	Non-venereal diseases of the male genital organs	2	.07
127	Metritis	7	.2
128	Uterine hemorrhage (non-puerperal)	7	.2
129	Uterine tumor (non-cancerous)	33	1.2
130	Other diseases of the uterus	23	.8
131	Cysts and other tumors of the ovary	35	1.2
132	Other diseases of the female genital organs	46	1.6
133	Non-puerperal diseases of the breast (cancer excepted) .....	..	..
VII. PUERPERAL DISEASES.			
134	Accidents of pregnancy	40	1.4
135	Puerperal hemorrhage	24	.8
136	Other accidents of labor	18	.6
137	Puerperal septicemia	163	5.9

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
138	Puerperal albuminuria and convulsions.....	61	2.3
139	Phlegmasia alba dolens (puerperal).....	1	.03
140	Other puerperal accidents—sudden death.....	22	.8
141	Puerperal diseases of the breast.....	1	.03
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.			
142	Gangrene.....	107	3.9
143	Carbuncle.....	13	.4
144	Acute abscess, phlegmon.....	27	.9
145	Other diseases of the skin and its adnexa.....	30	1.0
IX. DISEASES OF THE LOCOMOTOR SYSTEM.			
146	Non-tuberculous diseases of the bones.....	60	2.1
147	Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted)...	4	.1
148	Amputation.....		
149	Other diseases of the organs of locomotion.....	1	.03
X. MALFORMATIONS.			
150	Malformation.....	344	12.6
XI. DISEASES OF INFANCY.			
151	Congenital debility, icterus, sclerema.....	1,496	54.7
152	Other diseases peculiar to early infancy.....	102	3.7
153	Lack of care.....	56	2.0
XII. DISEASES OF OLD AGE.			
154	Senile debility.....	634	23.2
XIII. EXTERNAL CAUSES.			
A.—Suicides.			
155	Suicide by poison.....	183	6.7
156	Asphyxia.....	8	.3
157	Hanging or strangulation.....	37	1.3
158	Drowning.....	19	.6
159	Firearms.....	112	4.1
160	Cutting instruments.....	15	.5
161	Jumping from high places.....	1	.03
162	Crushing.....	7	.2
163	Other suicides.....	2	.07
B.—Accidents.			
164	Fractures.....	22	.8
165	Dislocations.....	3	.1
166a	Accidental gunshot wounds.....	61	2.2
166b	Injuries by machinery.....	34	1.2
166c	Injuries in mines and quarries.....	46	1.6
166d	Railroad accidents and injuries.....	453	16.5
166e	Injuries by horses and vehicles.....	134	4.9
166f	Other accidental traumatism.....	456	16.7
167	Burns and scalds.....	206	7.5
168	Burns from corrosive substances.....	2	.07
169	Sunstroke.....	26	.9
170	Freezing.....	9	.3
171	Electric shock.....	40	1.4
172	Accidental drowning.....	166	6.0
173	Inanition (starvation).....	15	.5
174	Absorption of deleterious gases (non-suicidal).....	44	1.6
175	Other acute poisonings.....	73	2.6
176	Other external violence.....	231	8.4

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	<i>C.—Homicides.</i>		
176a	Homicide.....	122	4.4
176b	Mob violence.....		
	<i>XIV. CAUSES ILL-DEFINED.</i>		
177	Dropsy.....	40	1.4
178	Sudden death.....	4	.1
179	Unspecified or ill-defined causes of death.....	147	5.3
	<i>XV. STILLBIRTHS.</i>		
180	Stillbirths.....	2,029	74.3
	All causes.....	26,224	1,326.8

TABLE No. 2.

Deaths from all Causes, by Months, Ages, Nationality and Conjugal Condition, for the Year Ending December 31, 1908, International Classification.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. GENERAL DISEASES. EPIDEMIC.												
1. Typhoid fever.....	50	49	49	38	32	32	63	93	121	150	121	87
2. Exanthematic typhus.....												
3. Recurrent fever.....					7	8	9	6	16	11	7	2
4. Intermittent and malarial fever.....	24	3	4	5	2	3						
5. Variola or smallpox.....		1	2	2								
6. Measles.....	8	57	52	47	24	11	2	2	1	4		1
7. Scarlatina.....	13	17	10	15	5	5	4	1	6	4	5	10
8. Whooping cough.....	13	20	44	53	90	37	47	46	29	6	25	19
9. Croup.....	2	1	3	2	8	1	1			1	2	2
10. Diphtheria.....	40	27	21	10	10	7	10	12	31	42	45	42
11. Influenza.....	172	316	167	70	40	13	9	14	5	4	22	35
12. Milky fever.....												
13. Asiatic cholera.....					1	1	1	7	5	3		
14. Cholera nostras.....	4	3	3	3	5	18	45	76	45	23	8	7
15. Dysentery.....												
16. Bubonic plague.....												
17. Yellow fever.....												
18. Leprosy.....												
19. Erysipelas.....	11	11	16	9	7	3	3	2	2	6	7	9
20. Other epidemic diseases.....												
21. Purulent septicaemia and infection.....	11	12	13	10	9	9	6	4	5	6	7	3
22. Glanders and farcy.....												
23. Malignant pustule and anthrax.....					1							1
24. Rabies.....			1							1	3	
25. Actinomycosis trichinosis, etc.....							1		1			
26. Pellagra.....	8	4	6	4	5	3	1	3	1	4	5	4
27. Tuberculosis of the larynx.....	360	369	374	376	343	315	269	264	277	271	268	263
28. Tuberculosis of the lungs.....												

28. Tuberculosis of the meninges.....	21	24	19	22	18	11	18	15	15	14	12	16
29. Abdominal tuberculosis.....	19	18	20	23	18	23	34	22	28	20	23	18
30. Pott's disease.....		1	4	4	2	3	2	3	3	2	3	2
31. Cold abscess.....					1							
32. White swelling.....	1	6		5		1	3	4	3	2	3	2
33. Tuberculosis of other organs.....	4	7	8	4	17	5	3	5	5	1	6	4
34. General tuberculosis.....	8	6	6	9	9	11	5	8	9	7	4	9
35. Scrofula.....												
36. Syphilis.....	1	3	1	2		1		1	1	2		1
37. Soft cancer.....	5	11	12	8	9	9	14	20	13	9	13	14
38. Gonorrhoea (5 years and over).....					1	1	1	1				
39. Gonorrhoea (under 5 years).....			1	1					1			
40. Cancer and other malignant tumors of the buccal cavity.....	9	6	5	6	4	7	7	7	11	5	6	4
41. Cancer and other malignant tumors of the stomach and liver.....	43	56	51	62	56	53	68	66	63	73	57	50
42. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....	10	15	5	13	11	15	24	12	10	15	8	11
43. Cancer and other malignant tumors of the female genital organs.....	17	24	13	33	28	35	26	23	25	24	23	20
44. Cancer and other malignant tumors of the breast.....	8	12	15	16	14	9	15	9	13	14	17	14
45. Cancer and other malignant tumors of the skin.....	11	8	9	10	14	9	18	9	16	17	8	12
46. Cancer and other malignant tumors of other organs.....	19	13	22	22	26	13	13	24	18	23	18	18
47. Other tumors.....	2	4	1	1	2	3	2	1	1	1	5	1
48. Acute articular rheumatism.....	7	5	7	13	6	8	9	3	1	6	6	9
49. Chronic rheumatism and gout.....	7	7	6	8	10	9	11	2	6	11	12	7
50. Scurvy.....												
51. Diabetes.....	24	30	20	25	13	18	30	23	21	32	31	23
52. Exophthalmic goitre.....	3	8		1	1	2	2	1	2	2	1	4
53. Addison's disease.....												
54. Leutemia.....	5	2	2	3	5	2	3	6	3	5	5	4
55. Anemia, chlorosis.....	10	5	6	7	7	11	6	4	7	8	8	
56. Other general diseases.....	6	2	1	2	4	1	1	3	1	4	7	
57. Alcoholism, acute and chronic.....	6	4	7	6	6	6	11	3	11	7	7	
58. Chronic lead poisoning.....	1							1	1			
59. Other chronic poisonings (occupational).....			1							1		
60. Other chronic poisonings.....	1				1	1	3	2				
II. DISEASES OF THE NERVOUS SYSTEM AND THE ORGANS OF SPECIAL SENSE.												
61. Epileptics.....	4	7	5	5	9	6	3	4	2	4	3	3
62. Simple meningitis.....	34	26	25	34	28	16	21	21	6	16	21	13
63. Epidemic cerebro-spinal meningitis.....	6	19	17	17	10	11	19	9	16	15	8	7
64. Progressive locomotor ataxia.....	3	4	3	5	4	5	5	5	8	4	7	3
65. Other diseases of the spinal cord.....	13	17	17	15	12	9	16	15	11	17	19	12
66. Congestion and hemorrhage of the brain.....	158	121	147	143	144	185	128	139	141	123	138	100
67. Softening of the brain.....	8	6	8	7	14	10	8	6	6	10	9	6
68. Paralysis, cause unspecified.....	73	46	53	50	41	20	18	20	26	18	21	13

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
67. General paralysis.....	14	16	22	19	13	16	23	16	15	12	12	17
68. Other forms of insanity.....	8	12	2	7	7	8	10	10	11	6	8	8
69. Epilepsy.....	16	13	13	16	8	17	16	10	8	12	9	7
70. Convulsions (non-puerperal; 5 years and over).....	2	3	1	1	1	1	1	1	1	1	1	1
71. Convulsions (under 5 years).....	8	19	10	13	8	14	14	9	5	5	4	5
72. Tetanus.....	2	2	5	1	9	2	7	6	12	2	7	5
73. Chorea.....	2	1	1	1	2	1	1	1	1	1	1	2
74a. Other diseases of the brain.....	16	10	8	9	6	5	4	6	5	9	3	9
74b. Other diseases of the nervous system.....	7	13	8	3	4	3	3	1	6	3	5	3
75. Diseases of the eye and its adnexa.....	1	1	1	1	1	1	1	1	1	1	1	1
76. Diseases of the ear.....	1	2	2	3	2	1	1	1	1	1	1	3
III. DISEASES OF THE CIRCULATORY SYSTEM.												
77. Pericarditis.....	1	3	3	5	3	3	6	2	4	7	5	4
78. Acute endocarditis.....	13	28	16	20	11	14	14	13	9	21	22	16
79. Organic diseases of the heart.....	329	360	313	323	291	261	260	268	269	253	317	291
80. Angina pectoris.....	17	25	25	19	21	16	21	22	20	26	26	26
81. Diseases of the arteries, aneurism.....	23	31	28	25	22	25	37	29	23	31	27	31
82. Embolism and thrombosis.....	3	7	6	7	4	1	5	7	9	7	4	10
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	1	2	2	3	2	1	2	2	1	1	2	1
84. Diseases of the lymphatic system (lymphangitis, etc.).....	5	5	5	2	5	2	3	4	1	1	1	5
85. Hemorrhages.....	1	1	1	1	1	1	1	1	1	1	1	1
86. Other diseases of the circulatory system.....	1	1	1	1	1	1	1	1	1	1	1	1
IV. DISEASES OF THE RESPIRATORY SYSTEM.												
87. Diseases of the nasal fossae.....	11	4	5	1	4	1	2	2	1	1	1	1
88. Diseases of the larynx.....	2	2	4	1	1	1	1	1	1	1	3	2
89. Diseases of the thyroid body.....	32	45	29	32	18	9	4	8	1	17	16	27
90. Acute bronchitis.....	25	23	30	20	13	9	13	13	12	18	23	15
91. Chronic bronchitis.....	77	84	102	68	42	22	20	19	27	42	75	98
92. Broncho-pneumonia.....	316	343	262	202	108	43	19	25	36	56	113	140
93. Pneumonia.....	6	9	6	6	7	5	2	3	6	1	1	3
94. Pleurisy.....	32	27	20	7	16	9	6	8	6	1	7	5
95. Congestion and apoplexy of the lungs.....	32	27	20	7	16	9	6	8	6	1	7	5

96. Gangrene of the lungs.....	6	13	10	4	8	5	3	4	6	7	8	5
97. Asthma.....				1	1				2	1	1	1
98. Pulmonary emphysema.....	9	5	7	4	9		2	4	7	6	2	4
99. Other diseases of the respiratory system (phtisis excepted).....												
DISEASES OF THE DIGESTIVE SYSTEM.												
100. Diseases of the mouth and adenae.....												
101. Diseases of the pharynx.....	4	2	1	2	1	1	1	4	5	5	3	1
102. Diseases of the esophagus.....				6	2			3		5	1	5
103. Ulcer of the stomach.....	6	9	4	5	9	4	10	5	9	3	7	10
104. Other diseases of the stomach (cancer excepted).....	44	31	41	45	47	49	70	66	57	62	54	40
105. Diarrhoea and enteritis (under 2 years).....												
106. Chronic diarrhoea (under 2 years).....	20	33	34	43	38	39	319	417	288	199	90	30
107. Diarrhoea and enteritis (2 years and over).....	34	23	32	25	37	36	70	82	93	57	42	21
108. Intestinal parasites.....												
109. Hernia and intestinal obstruction.....	33	17	22	26	29	24	19	30	33	22	22	23
110. Other diseases of the intestines.....	7	7	8	7	9	14	9	15	8	12	8	8
111. Acute yellow atrophy of the liver.....	1	1	2	1		1		1	1	1		2
112. Hydatid tumors of the liver.....	16	18	21	22	24	23	25	20	22	20	16	18
113. Cirrhosis of the liver.....	5	6	9	4	10	5	12	7	6	4	5	8
114. Biliary calculi.....												
115. Other diseases of the liver.....	18	15	12	21	10	16	9	14	18	17	10	19
116. Diseases of the spleen.....												
117. Simple peritonitis (non-puerperal).....	16	16	13	11	11	9	4	8	3	5	1	2
118. Other diseases of the digestive system (cancer and tuberculous excepted).....												
119. Appendicitis and abscess of the iliac fossae.....	13	18	15	17	17	24	28	29	24	26	27	11
VI. DISEASES OF THE GENITO-URINARY SYSTEM.												
119. Acute nephritis.....	23	18	17	18	27	17	14	29	14	27	17	14
120. Bright's disease.....	141	117	112	134	126	109	119	99	94	106	137	127
121. Other diseases of the kidneys and their adnexa.....	5	6	6	3	5	2	3	8	6	7	2	8
122. Calculi of the urinary tract.....	1	1						1		2		
123. Diseases of the bladder.....	14	9	15	13	10	11	10	6	9	12	11	6
124. Diseases of the urethra, urinary abscess, etc.....												
125. Diseases of the prostate.....	1	3			1			2		1		3
126. Non-puerperal diseases of the male genital organs.....	4	9	7	9	9	8	6	5	5	7	3	7
127. Metritis.....			3				1			1		
128. Uterine hemorrhage (non-puerperal).....		1		2			1				2	1
129. Uterine tumor (non-cancerous).....	2	2	1	4	2	5	1	5	2	3	2	3
130. Other diseases of the uterus.....	2	2		1	2	2	2	3	4	2	1	1
131. Cysts and other tumors of the ovary.....		4	4	3	5	4	1	3		4	1	6
132. Other diseases of the female genital organs.....			4	4	6	4	3	5		7	2	4
133. Non-puerperal diseases of the breast (cancer excepted).....	3								3			

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
VII. PUERPERAL DISEASES.												
134. Accidents of pregnancy.....	3	3	7	2	3	2	6	5	2	3	2	2
135. Puerperal hemorrhage.....	.....	2	3	1	3	3	3	3	2	2	.....	3
136. Other accidents of labor.....	4	3	1	3	2	1	1	1	.....	.....	.....	1
137. Puerperal septicemia.....	14	15	23	19	8	10	15	7	11	14	14	14
138. Puerperal albuminuria and convulsions.....	3	1	4	8	6	5	7	5	9	3	6	4
139. Pilegrumia alba dolens (puerperal).....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
140. Other puerperal accidents—sudden death.....	1	3	1	1	4	2	1	1	1	3	1	3
141. Puerperal diseases of the breast.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
VIII. DISEASES OF THE SKIN AND CIRCULATORY SYSTEM.												
142. Gangrene.....	12	11	7	9	13	8	6	8	11	8	10	4
143. Carbuncle.....	.....	1	1	4	3	.....	2	.....	.....	.....	.....	2
144. Acute abscess, phlegmon.....	4	2	1	.....	4	.....	4	2	2	3	5	2
145. Other diseases of the skin and its adnexa.....	2	2	3	3	3	.....	2	2	3	5	4	1
IX. DISEASES OF THE LOCOMOTOR SYSTEM.												
146. Non-tuberculous diseases of the bones.....	7	4	4	2	7	7	4	3	5	7	6	4
147. Arthritis and other diseases of the joints (tuberculous and rheumatism excepted).....	.....	1	.....	.....	.....	.....	.....	.....	1	1	.....	1
148. Amputation.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
149. Other diseases of the organs of locomotion.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
X. MALFORMATIONS.												
150. Malformations.....	30	26	33	27	27	26	23	22	29	26	30	37
XI. DISEASES OF INFANCY.												
151. Congenital debility, tetanus, sclerosis.....	143	125	159	120	112	116	123	137	121	114	99	112
152. Other diseases peculiar to early infancy.....	8	15	7	6	7	7	13	4	10	7	4	14
153. Lack of care.....	4	3	2	1	2	3	4	9	8	6	9	.....
XII. DISEASES OF OLD AGE.												
154. Senile debility.....	33	101	36	37	63	55	33	31	32	29	25	.....

XIII. External Causes.

A. Suicide.

155. Suicide by poison.....	19	9	14	19	21	17	8	14	16	15	12	19
156. Asphyxia.....	2	1	1	2	1	5	3	6	4	3	1	2
157. Hanging or strangulation.....	2	2	2	1	1	8	3	2	2	3	2	3
158. Drowning.....	8	9	8	8	10	9	12	8	14	9	12	5
159. Firearms.....												
160. Cutting instruments.....	2	3	2	1	1	2	1		2	1	1	
161. Jumping from high places.....												
162. Crushing.....			2	2	1	1	1					
163. Other suicides.....			1									1

B. Accidents.

164. Fractures.....	2	1	3	6	4	1	1	1	1			2
165. Dislocations.....			1	1								
166a. Accidental gunshot wounds.....	9	4	3	3	3	4	4	9	5	8	9	
166b. Injuries by machinery.....	2	3	5	5	3	1	2	1	6	4	1	1
166c. Injuries in mines and quarries.....	7	6	6	3	2	1	3	1	4	4	3	3
166d. Railroad accidents and injuries.....	38	35	27	29	43	34	50	44	48	37	33	36
166e. Injuries by horses and vehicles.....	8	4	5	4	9	16	12	20	17	19	14	6
166f. Other accidental traumata.....	39	30	39	27	40	28	38	39	57	32	46	41
167. Burns and scalds.....	31	13	9	17	21	8	13	13	13	29	21	19
168. Burns from corrosive substances.....									1		1	

169. Sunstroke.....						10	9	5	2			3
170. Freezing.....	2	3	1									2
171. Electric shock.....	1	2	6	1	5	6	7	5	3	1	1	3
172. Accidental drowning.....	4	4	8	14	23	35	31	24	2	8	1	2
173. Inanition (starvation).....	1	1				3	2	4	1		2	
174. Absorption of deleterious gases (non-suicidal).....	4	1	3	7	3	4	1	2	6	6	1	
175. Other acute poisonings.....	8	11	3	6	6	7	4	6	7	10	4	6
176. Other external violence.....	20	10	20	19	13	17	21	24	15	18	23	26

C. Homicides.

176a. Homicides.....	7	8	5	10	25	8	8	12	18	5	9	7
176b. Mob violence.....												

XIV. Causes Ill-Deserved.

177. Dropsy.....	7	6	5	10	6	1	1	1	2	1		
178. Sudden death.....	1											
179. Unspecified or ill-defined cause of death.....	14	29	21	13	13	5	9	11	6	7	5	14

XV. Strangulation.

180. Strangulation.....	187	188	200	190	161	166	159	179	145	154	163	168
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Grand total.....

3,888	3,594	3,889	3,153	3,886	2,547	2,968	3,068	2,897	2,869	2,792	2,714
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TABLE No. 2—Continued.

Deaths from all Causes, by Months, Ages, Nationality and Conjugal Condition, for the Year Ending December 31, 1908, International Classification.

	0	1	2	3	4	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
I. GENERAL DISEASES—EXCLUDED.																		
1. Typhoid fever.....	11	10	19	19	12	45	72	105	131	96	76	57	45	40	41	29	28	17
2. Exanthematus typhus.....																		
3. Recurrent fever.....																		
4. Intermittent and malarial fever.....	10	6	2		2	5	4	3	6	3	3	1	4	4	1	4	5	5
5. Varicella or smallpox.....	3									1			2					
6. Measles.....	50	29	13	14	8	26	9	16	5	8	4	7	5	3	5			1
7. Scarlatina.....	4	8	17	13	10	22	9	5	2	4	2							
8. Whooping cough.....	260	85	40	15	7	17		2										
9. Group.....	3	1	3	4	3						1							
9a. Diphtheria.....	18	42	51	33	19	87	23	9	3	3	3	3				1	1	
10. Influenza.....	32	11	10	6	1	10	10	16	13	11	15	24	21	30	37	34	50	86
11. Military fever.....																		
12. Asiatic cholera.....																		
13. Cholera nostras.....				1			1									1	2	4
14. Dysentery.....			19	3	3	2	1	2	5	5	3		3	5	4	10	16	36
15. Bubonic plague.....																		
16. Yellow fever.....																		
17. Leprosy.....																		
18. Erysipelas.....	20	2				1	1		3	2	2	2	5	2	7	7	2	4
19. Other epidemic diseases.....																		1
20. Purulent septicaemia and infection.....	9				1	5	5	4	3	7	3	3	5	6	8	4	3	5
21. Glanders and fævy.....																		
22. Malignant pustule and anthrax.....																	1	
23. Rabies.....						1	1								1			
24. Actinomycosis trichinosis, etc.....								1		1								

25. Pellegra.....	1	27	15	7	1	4	23	61	1	1	347	561	1	3	9	5	3	3	199	165	5	3
26. Tuberculosis of the larynx.....	77	43	12	10	6	24	13	10	4	3	2	6	5	7	3	2	1	1	2	2	1	1
27. Tuberculosis of the lungs.....	11	13	1	1	2	8	11	25	17	14	19	21	15	24	17	16	18	18	18	18	18	18
28. Tuberculosis of the meninges.....	1			1	2	1	5	3	2	1	2	1	4	2	1							
29. Abdominal tuberculosis.....																						
30. Pot's disease.....																						
31. Cold abscess.....																						
32. White swelling.....	2	2	1	1	1	1	3	5	5	5	6	4	6	1	4	8	5	4	2	2	3	3
33. Tuberculosis of other organs.....	10	1	1	1	1	2	3	7	15	8	8	7	5	4	4	4	4	2	4	4	4	4
34. General tuberculosis.....																						
35. Scrofula.....	6	1	1	2			1	1	2	2	8	4	5	11	9	8	5	3	4	2	2	2
36. Syphilis.....	67	5	1																			
36a. Soft cancer.....																						
37. Gonorrhea (5 years and over).....																						
38. Gonorrhea (under 5 years).....	3																					
39. Cancer and other malignant tumors of the buccal cavity.....																						
40. Cancer and other malignant tumors of the stomach and liver.....	1				1																	
41. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....		1						1	1	3	3	6	7	14	14	19	29	18	18	18	18	18
42. Cancer and other malignant tumors of the female genital organs.....								1														
43. Cancer and other malignant tumors of the breast.....																						
44. Cancer and other malignant tumors of the skin.....							1															
45. Cancer and other malignant tumors of other organs.....				1			2	2	3	1	4	2	13	7	23	32	33	28	28	28	28	28
46. Other tumors.....				1																		
47. Acute articular rheumatism.....	1						8	6	6	6	3	4	2	1	7	2	7	3	6	6	6	6
48. Chronic rheumatism and gout.....							1	1	2		1	2	3	6	4	7	11	14	14	14	14	14
49. Scoury.....	1																					
50. Diabetes.....	1	1	3	1			4	13	9	7	9	8	12	9	16	22	34	39	42	42	42	42
51. Exophthalmic goitre.....																						
52. Addison's disease.....																						
53. Leukemia.....							1	3	3	1	3	2	4	1	6	4	3	3	1	1	1	1
54. Anemia, chlorosis.....																						
55. Other general diseases.....	2	1					2	2	3	1	5	4	5	8	6	8	3	12	10	10	10	10
56. Alcoholism, acute and chronic.....	7	1	2				1	3	3	1	2	8	12	7	15	11	13	7	6	6	6	6
57. Chronic lead poisoning.....																						
58. Other chronic poisonings (occupational).....																						
59. Other chronic poisonings.....																						

TABLE No. 2—Continued.

	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
II. DISEASES OF THE NERVOUS SYSTEM AND THE ORGANS OF SPECIAL SENSE.																		
60. Encephalitis.....	19	5	3		2	5	1	1	1	2	2	2	1	2	4			1
61. Simple meningitis.....	87	33	21	9	8	21	8	13	6	8	6	6	8	5	7	1	7	5
61a. Epidemic cerebro-spinal meningitis.....	45	27	15	1	9	21	10	6	5	3	1	2			2		2	2
62. Progressive locomotor ataxia.....	1		1					1	1	1	1		6	5	15	4	8	8
63. Other diseases of the spinal cord.....	6	4	3	2		5	4	4	1	3	3	6	7	4	14	14	17	20
64. Congestion and hemorrhage of the brain.....	49	9	5	3		4	4	8	11	10	26	29	36	76	118	130	170	247
65. Softening of the brain.....											2	1	1	2	3	6	8	14
66. Paralysis, cause unspecified.....	3					2	1	1	2	4	5	6	1	5	10	24	37	45
67. General paralysis.....								1	4	1	8	8	16	15	10	9	14	22
68. Other forms of insanity.....							1	2	4	4	5	3	8	10	8	10	11	8
69. Epilepsy.....		1	2	1	1	2	5	9	17	13	17	15	14	10	7	5	6	7
70. Convulsions (non-puerperal; 5 years and over).....		2				2	1		2	1	1	2			1			1
71. Convulsions (under 5 years).....	106			6				1	1	2	3	3	1	2	1	2	1	1
72. Tetanus.....	26	1			1	7	6	1	1	2								
73. Chorea.....			1				4	1	1					3				
74a. Other diseases of the brain.....	6	6		1		4	1	4	2	9	3	5	5	9	5	3	4	4
74b. Other diseases of the nervous system.....	1	1				2	1	4	2		2	2	2	3	8	5	6	5
75. Diseases of the eye and its adnexa.....									1		1	1					1	1
76. Diseases of the ear.....	2		1			2		3		1			2					
III. DISEASES OF THE CIRCULATORY SYSTEM.																		
77. Pericarditis.....	2					1	2		2	1	1	6	5	1	2	4	2	9
78. Acute endocarditis.....	5						8		3	9	5	5	5	7	15	12	18	17
79. Organic disease of the heart.....	47	1	2	2	8	26	45	30	51	72	98	101	151	219	263	403	476	475
80. Angina pectoris.....									2	4	6	3	5	16	15	36	84	47
81. Diseases of the arteries, aneurism, etc.....							1	1	2	1	4	6	5	5	5	26	17	36
82. Embolism and thrombosis.....	1		2			1	1	3	3	1		4	4	6	2	8	5	6
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....																		2
84. Diseases of the lymphatic system (lymphangitis, etc.).....						1	1	1			1	1			1		1	2

34. Hemorrhages..... 1
35. Other diseases of the circulatory system..... 1

IV. DISEASES OF THE RESPIRATORY SYSTEM.

37. Diseases of the nasal fossae..... 1
38. Diseases of the larynx..... 1
39. Diseases of the thyroid body..... 1
40. Acute bronchitis..... 1
41. Chronic bronchitis..... 1
42. Broncho-pneumonia..... 1
43. Pneumonia..... 1
44. Pleurisy..... 1
45. Congestion and apoplexy of the lungs..... 1
46. Gangrene of the lungs..... 1
47. Asthma..... 1
48. Pulmonary emphysema..... 1
49. Other diseases of the respiratory system (pneumonia excepted)..... 1

V. DISEASES OF THE DIGESTIVE SYSTEM.

100. Diseases of the mouth and adnexa..... 1
101. Diseases of the pharynx..... 1
102. Diseases of the esophagus..... 1
103. Ulcer of the stomach..... 1
104. Other diseases of the stomach (cancer excepted)..... 1
105. Diarrhoea and enteritis (under 2 years)..... 1
106. Chronic diarrhoea (under 2 years)..... 1
107. Diarrhoea and enteritis (2 years and over)..... 1
108. Intestinal parasites..... 1
109. Hernia and intestinal obstruction..... 1
110. Other diseases of the intestines..... 1
111. Acute yellow atrophy of the liver..... 1
112. Hydatid tumors of the liver..... 1
113. Cirrhosis of the liver..... 1
114. Biliary calculi..... 1
115. Other diseases of the liver..... 1
116. Diseases of the spleen..... 1
117. Suppurative peritonitis (non-parasitic)..... 1
118. Other diseases of the digestive system (cancer and tuberculosis excepted)..... 1
119. Appendicitis and abscess of the iliac fossa..... 1

TABLE No. 2—Continued.

	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
VI. DISEASES OF THE GENITO-URINARY SYSTEM.																		
119. Acute nephritis.....	19	10	3	2		8	4	3	8	16	10	15	7	15	13	15	15	12
120. Bright's disease.....	11		6	5		13	5	13	20	26	37	47	57	72	109	99	138	167
121. Other diseases of the kidneys and their ancha.....	10	1				1	1	1	1	2	1	2	3	4	4	1	5	6
122. Calculi of the urinary tract.....											2	7	1	2	3	1	1	1
123. Diseases of the bladder.....	3								1	3	3					8	5	17
124. Diseases of the urethra, urinary abscess, etc.....													1	2	2	3		
125. Diseases of the prostate.....													2		2	4	9	
126. Non-venereal diseases of the male genital organs.....						2				1	3		1					1
127. Metritis.....						1			2	2	1	1						
128. Uterine hemorrhage (non-puerperal).....																		
129. Uterine tumor (non-cancerous).....																		
130. Other diseases of the uterus.....						1			1	2	1	5	6	7	3	3	3	1
131. Cysts and other tumors of the ovary.....						3			3	1	2	5	4	3	2	1	1	2
132. Other diseases of the female genital organs.....						1			8	9	10	9	5	1	2			4
133. Non-puerperal diseases of the breast (cancer excepted).....																		
VII. PUERPERAL DISEASES.																		
134. Accidents of pregnancy.....						2			6	10	10	10	3					
135. Puerperal hemorrhage.....						4			4	2	5	5	4					
136. Other accidents of labor.....							1		4	5	5	4						
137. Puerperal septicaemia.....								11	40	48	35	13	15	4	1		1	
138. Puerperal albuminuria and convulsions.....						8			16	14	12	4	4	2				
139. Phlegmasia alba dolens (puerperal).....																		
140. Other puerperal accidents—sudden death.....						1			4	2	5	6	4					
141. Puerperal diseases of the breast.....											1							
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.																		
142. Gangrene.....	1					1											92	8
143. Carbuncle.....																	3	1

TABLE No. 2—Continued.

	0	1	2	3	4	5	6	10	15	20	25	30	35	40	45	50	55	60	65	70
166d. Other accidental traumas.....	7	4	5	3	5	20	15	15	15	24	20	16	13	22	16	22	17	23	29	
167. Burns and scalds.....	0	12	24	23	12	19	9	9	9	8	10	8	11	7	5	6	9	6	6	
168. Burns from corrosive substances.....	1						1													
169. Sunstroke.....	2								1		2	1	1	2	3		4	3	1	
170. Poisoning.....										1					1	3		3		
171. Electric shock.....						1	3	5	11	6	6	6	1	2	1	2	1	3	1	
172. Accidental drowning.....	2	3	9	2		15	23	25	27	11	12	12	3	10	3	2	2	2	2	
173. Inanition (starvation).....	3	2		1						2	2	2	2	5	3	2	3	1	2	
174. Absorption of deleterious gases (non-suicidal).....	7					2				2	2	2	3	3	3	3	3	1	3	
175. Other acute poisons.....	0	18	7	1		5	1	1	2	1	2	4	3	1	3	4	3	1	3	
176. Other external violence.....	136	7	4	2		3	5	1	1	1	4				1	3	3	1		
C.—Homicide.																				
176a. Homicide.....	3				1	1	1	1	10	22	12	15	13	6	17	5	3	3	3	
176b. Mob violence.....																				
XIV. CAUSES IN-DEFINED.																				
177. Dropsy.....									1	1	1	1	4	1	2		4	3	0	
178. Sudden death.....																				
179. Unspecified or ill-defined causes of death.....	73	3		2	1		1			6	2	4	1	6		1	6	5	8	7
XV. SUICIDES.																				
180. Suicides.....	2,029																			
Grand total.....	7,714	1,133	533	292	196	673	586	1,018	1,406	1,318	1,356	1,373	1,326	1,410	1,588	1,768	2,040	2,450		

TABLE No. 2—Continued.

Deaths from all Causes, by Months, Ages, Nationality and Conjugal Condition, for the Year Ending December 1, 1908, International Classification.

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	N. R.	Single.	Married.	Widowed.	N. R.	Total
I. GENERAL DISEASES—EPIDEMIC.															
1. Typhoid fever.....	15	11	4	1	1	859	26	810	60	15	451	378	52	4	895
2. Exanthematic typhus.....															
3. Recurrent fever.....															
4. Intermittent and malarial fever.....	5	2	8			78	5	72	9	2	33	37	13		83
5. Variola or smallpox.....	1	1				9	1	6	2	2	4	4	2		10
6. Measles.....	3	1			2	207	2	207		2	168	31	9	1	209
7. Scarletina.....						94	1	93	2		90				95
8. Whooping cough.....						385	31	416			416	5			418
9. Croup.....						18		18			17		1		18
10. Diphtheria.....					1	291	6	289	6	2	286	11			297
11. Influenza.....	115	131	182	21	1	839	28	717	131	19	164	347	353	3	897
12. Asiatic cholera.....															
13. Cholera nostras.....	3	1	3			18		12	5	1	4	7	7		18
14. Dysentery.....	19	42	56	10	1	241	4	200	32	13	56	71	117	1	245
15. Bubonic plague.....															
16. Yellow fever.....															
17. Leprosy.....															
18. Erysipelas.....	8	9	8	1		82	4	73	10	3	34	28	23	1	86
19. Other epidemic diseases.....						1		1					1		1
20. Purulent septicemia and infection.....	9	6	8	1		92	3	78	16	1	32	51	11	1	95
21. Glanders and farcy.....															
22. Malignant pustule and anthrax.....						2		2							2
23. Rabies.....						5		4		1	5	2			5
24. Actinomycosis trichinosis, etc.....						2		1			1	1			1

TABLE No. 2—Continued.

	70 to 74	75 to 79	80 to 84	85 to 89	90 and over	Unknown	White	Colored	American	Foreign	N. R.	Single	Married	Widowed	N. R.	Total
35. Pellagra.....	2	3	2				46	2	39	9		12	26	9	1	48
36. Tuberculosis of the larynx.....	136	78	40	3		5	3,593	274	3,454	242	81	1,986	1,963	491	38	3,777
37. Tuberculosis of the lungs.....							108	13	199	4		176	26	4		305
38. Tuberculosis of the meninges.....	15	8	3			1	207	18	200	22	3	103	118	47	7	273
39. Abdominal tuberculosis.....																
40. Pott's disease.....			1	1			27	2	27	2		21	6	2		29
41. Cold abscess.....							2		2							2
42. White swelling.....	2	2	1				27	3	27	3		15	9	6		30
43. Tuberculosis of other organs.....	4	3	1				64	6	66	3	1	22	40	7	1	70
44. General tuberculosis.....	3	2					86	5	86	5		46	38	7		91
45. Scrofula.....							11	2	13			10	2	1		12
46. Syphilis.....							117	20	128	7	2	99	18	20		137
47. Soft cancer.....																
48. Gonorrhea (5 years and over).....							4		4							
49. Gonorrhea (under 5 years).....							3		3			1	1	2		4
50. Cancer and other malignant tumors of the buccal cavity.....	5	14	5	1			76	1	61	14	2	7	47	21	2	77
51. Cancer and other malignant tumors of the stomach and liver.....	102	61	44				690	6	654	122	10	44	436	209	7	696
52. Cancer and other malignant tumors of the peritoneum, intestines and rectum.....	17	9	6			1	145	4	124	25		15	88	45	1	149
53. Cancer and other malignant tumors of the female genital organs.....	21	10	3				275	16	257	32	2	17	184	89	1	291
54. Cancer and other malignant tumors of the breast.....	8	16	10	1			156		139	16	1	17	93	46		156
55. Cancer and other malignant tumors of the skin.....	21	19	23	6			139	2	122	19		6	76	58	1	141
56. Cancer and other malignant tumors of other organs.....	24	20	14	1			226	3	192	34	3	30	142	66	1	239
57. Other tumors.....	5	2	1				23	1	23			3	15	5		23
58. Acute articular rheumatism.....	11	6					79	1	66	11	3	29	36	15		80
59. Chronic rheumatism and gout.....	14	11	15	2			92	2	79	10	5	9	41	42	2	94
60. Scoury.....							1		1							1
61. Diabetes.....	23	18	19			1	278	13	247	38	5	54	168	64	4	290
62. Exophthalmic goitre.....		1					26		22	3		5	15	5		26
63. Addison's disease.....							9		7	2			1	8		9
64. Leukemia.....	4	2	2				44	1	42	3		14	26	5		45

54. Anemia, chlorosis.....	6	5	4	.....	84	2	79	7	.....	19	51	16	88
55. Other general diseases.....	4	.....	4	.....	28	.....	35	2	1	13	10	3	25
56. Alcoholism, acute and chronic.....	1	.....	.....	.....	81	2	66	9	8	29	30	20	58
57. Chronic lead poisoning.....	.....	.....	.....	.....	3	.....	2	1	.....	.....	3	.....	3
58. Other chronic poisonings (occupational).....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2
59. Other chronic poisonings.....	.....	.....	.....	.....	10	.....	9	1	.....	3	6	1	10
II. DISEASES OF THE NERVOUS SYSTEM AND THE ORGANS OF SPECIAL SENSE.													
60. Encephalitis.....	4	1	1	.....	54	1	53	2	.....	38	12	5	55
61. Simple meningitis.....	1	3	5	.....	293	6	253	11	.....	297	48	7	204
61a. Epidemic cerebro-spinal meningitis.....	1	.....	.....	.....	150	4	153	1	.....	138	14	1	154
62. Progressive locomotor ataxia.....	4	2	1	.....	66	.....	47	7	2	6	35	13	66
63. Other diseases of the spinal cord.....	21	18	16	1	168	5	157	15	1	38	86	46	173
64. Congestion and hemorrhage of the brain.....	255	230	246	35	1,653	42	1,394	265	38	201	861	611	1,065
65. Softening of the brain.....	22	17	19	2	95	3	85	12	1	2	61	34	98
66. Paralysis, cause unspecified.....	80	74	85	12	331	8	332	54	13	41	174	178	399
67. General paralysis.....	25	34	28	1	190	5	168	24	3	31	102	59	195
68. Other forms of insanity.....	4	9	8	1	95	2	74	14	9	20	47	26	97
69. Epilepsy.....	5	4	3	1	142	3	133	4	8	88	41	15	145
70. Convulsions (non-puerperal; 5 years and over).....	1	.....	.....	.....	10	1	11	.....	.....	6	4	1	11
71. Convulsions (under 5 years).....	.....	.....	.....	.....	107	7	114	.....	.....	114	.....	.....	114
72. Tetanus.....	1	.....	.....	.....	57	3	58	2	.....	45	13	2	60
73. Chorea.....	.....	.....	.....	.....	11	.....	11	.....	.....	7	3	1	11
74a. Other diseases of the brain.....	7	4	5	2	87	3	76	12	2	36	41	13	93
74b. Other diseases of the nervous system.....	5	3	8	1	56	3	55	3	1	9	32	18	59
75. Diseases of the eye and its adnexa.....	1	.....	.....	.....	4	.....	4	.....	.....	1	3	.....	4
76. Diseases of the ear.....	1	1	.....	.....	14	.....	13	2	.....	8	5	1	14
III. DISEASES OF THE CIRCULATORY SYSTEM.													
77. Pericarditis.....	3	2	3	.....	43	3	38	5	3	6	28	11	6
78. Acute endocarditis.....	23	21	25	4	180	8	157	35	5	48	89	57	197
79. Organic diseases of the heart.....	550	491	423	42	3,398	136	2,916	511	107	422	1,790	1,286	3,534
80. Angina pectoris.....	40	27	26	1	261	2	216	44	3	16	170	75	263
81. Diseases of the arteries, atheroma, aneurism.....	42	66	104	14	324	9	239	90	4	23	164	141	383
82. Embolism and thrombosis.....	9	9	1	1	68	2	61	9	.....	13	40	17	70
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....	2	4	2	.....	16	.....	13	3	.....	4	8	4	16
84. Diseases of the lymphatic system (lymphangitis, etc.).....	.....	.....	.....	.....	4	.....	3	1	.....	3	1	.....	4
85. Hemorrhages.....	2	1	1	1	32	2	29	4	1	17	10	7	34
86. Other diseases of the circulatory system.....	.....	.....	.....	.....	2	.....	2	.....	.....	1	1	.....	2
IV. DISEASES OF THE RESPIRATORY SYSTEM.													
87. Diseases of the nasal fossae.....	.....	1	1	.....	2	1	2	1	.....	2	1	.....	3
88. Diseases of the larynx.....	.....	.....	.....	.....	38	1	35	3	1	30	6	3	39

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 and over	Unknown	White	Colored	American	Foreign	N. R.	Single	Married	Widowed	N. R.	Total
88. Diseases of the thyroid body.....						10		9		1	4	5	1		10
89. Acute bronchitis.....	17	14	23	4		230	9	215	23	1	160	26	52	1	239
90. Chronic bronchitis.....	28	36	61	11	1	199	14	142	68	2	19	79	115		213
91. Broncho-pneumonia.....															
92. Broncho-pneumonia.....	43	54	42	5	1	634	42	614	58	6	438	114	120	4	676
93. Pneumonia.....	154	111	143	10	5	1,892	101	1,477	185	31	706	664	367	17	1,892
94. Pleurisy.....	5	5	4			84	3	81	5	1	21	27	8		37
95. Congestion and apoplexy of the lungs.....	15	15	24	3	1	144	4	124	19	5	63	29	53	3	148
96. Gangrene of the lungs.....															
97. Asthma.....	16	10	17			66	13	66	13	1	11	41	26	1	79
98. Pulmonary emphysema.....						4	1	5			1	3	1		5
99. Other diseases of the respiratory system (Githias excepted)	5	6	1	2		55	4	50	8	1	15	31	12	1	59
V. DISEASES OF THE DIGESTIVE SYSTEM.															
100. Diseases of the mouth and adnexa.....	1		1			24	1	24	1		20	3	2		25
101. Diseases of the pharynx.....			3	1		33	1	34			25	6	3		34
102. Diseases of the esophagus.....									1		2			1	3
103. Ulcer of the stomach.....	7	4	5	1		79	2	70	8	3	15	41	25		81
104. Other diseases of the stomach (cancer excepted).....	39	55	73	11		585	21	523	68	15	273	165	164	4	606
105. Diarrhoea and enteritis (under 2 years).....						1,560	54	1,607	5	2	1,614				1,614
106a. Chronic diarrhoea (under 2 years).....	21					21	21	21			21	199	141	6	21
106b. Diarrhoea and enteritis (2 years and over).....	59	60	73	12		533	21	502	44	8	208				552
107. Intestinal parasites.....						3		3			2				3
108. Hernia and intestinal obstruction.....	16	23	15	4		292	8	250	44	6	101	140	57	2	300
109. Other diseases of the intestines.....															
110. Acute yellow atrophy of the liver.....	11	11	9	1		108	4	97	11	4	45	36	31		112
111. Hydatid tumors of the liver.....	1	1	1			11		6	5		1	9	1		11
112. Cirrhosis of the liver.....															
113. Biliary calculi.....	20	12	11	1		237	10	197	40	10	30	149	60	8	247
114. Other diseases of the liver.....	7	4	6			81		72	7	2	11	46	24		81
115. Diseases of the spleen.....	12	14	19	1		173	6	159	15	5	38	92	48	1	179
116. Simple peritonitis (non-purulent).....	1	1	1			4	1	3	2		3	3	2		6
	8	3	1			93	6	90	6	3	38	50	10	1	99

117. Other diseases of the digestive system (cancer and tuberculosis excepted).
 118. Appendicitis and abscess of the ilio fossa.

VI. DISEASES OF THE GENITO-URINARY SYSTEM.

119. Acute nephritis.....	3	4	5	.....	1	5	.....	3	5	.....	131	.....	5	.....	1	5	.....	248
120. Bright's disease.....	24	14	16	4	.....	224	.....	10	201	.....	77	.....	103	.....	3	224	.....	1,420
121. Other diseases of the kidneys and their adnexa.....	217	198	165	15	.....	1,371	49	1,156	238	28	5	.....	757	453	11	1,420	.....	65
122. Calculi of the urinary tract.....	7	7	8	2	.....	61	4	57	9	6	2	.....	31	16	1	9	.....	9
123. Diseases of the bladder.....	16	14	41	3	.....	124	2	98	26	2	2	.....	6	46	2	126	.....	126
124. Diseases of the urethra, urinary abscess, etc.....	2	.....	1	.....	.....	11	.....	10	.....	1	.....	.....	3	4	3	11	.....	11
125. Diseases of the prostate.....	16	19	16	3	.....	77	2	61	16	2	.....	.....	52	23	.....	70	.....	70
126. Non-venereal diseases of the male genital organs.....	.....	1	.....	.....	.....	2	.....	1	.....	.....	.....	.....	2	.....	.....	2	.....	2
127. Gleet.....	6	.....	.....	.....	.....	6	.....	1	.....	.....	.....	.....	4	1	.....	7	.....	7
128. Uterine hemorrhage (non-puerperal).....	.....	.....	.....	.....	.....	7	.....	5	2	.....	.....	.....	1	6	.....	7	.....	7
129. Uterine tumor (non-cancerous).....	2	.....	2	.....	.....	27	6	30	2	1	.....	.....	25	5	1	33	.....	33
130. Other diseases of the uterus.....	.....	.....	.....	.....	.....	21	1	20	2	.....	.....	.....	15	4	.....	22	.....	22
131. Cysts and other tumors of the ovary.....	6	2	2	.....	.....	35	.....	30	5	.....	.....	.....	18	11	.....	36	.....	36
132. Other diseases of the female genital organs.....	.....	.....	.....	.....	.....	43	2	45	.....	.....	.....	.....	33	4	1	45	.....	45
133. Non-puerperal diseases of the breast (cancer excepted).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

VII. PUERPERAL DISEASES.

134. Accidents of pregnancy.....
 135. Puerperal hemorrhage.....
 136. Other accidents of labor.....
 137. Puerperal septicæmia.....
 138. Puerperal albuminuria and convulsions.....
 139. Phlegmasia alba dolens (puerperal).....
 140. Other puerperal accidents— sudden death.....
 141. Puerperal diseases of the breast.....

VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.

142. Gangrene.....
 143. Carbuncle.....
 144. Acute abscess, phlegmon.....
 145. Other diseases of the skin and its adnexa.....

IX. DISEASES OF THE LOCOMOTOR SYSTEM.

146. Non-tuberculous diseases of the bones.....
 147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted).....
 148. Amputation.....
 149. Other diseases of the organs of locomotion.....

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	N. R.	Single.	Married.	Widowed.	N. R.	Total
X. MALFORMATIONS.															
150. Malformations.....						340	4	342	1	1	343	1			344
XI. DISEASES OF INFANCY.															
151. Congenital debility, icterus, scelerema.....						1,452	44	1,494	2		1,496				1,496
152. Other diseases peculiar to early infancy.....						99	3	102			103				102
153. Lack of care.....						51	5	56			56				56
XII. DISEASES OF OLD AGE.															
154. Senile debility.....	59	117	330	113	2	635	9	436	172	23	44	146	431	13	634
XIII. EXTERNAL CAUSES.															
A.—Suicides.															
155. Suicide by poison.....	3	3	1		1	183		186	15	10	52	102	27	2	183
156. Asphyxia.....	2					8		8	3		3	3	2		8
157. Hanging or strangulation.....	3	2				36	1	39	6	2	6	28	3		37
158. Drowning.....			1			19		16	2	1	7	8	3	1	19
159. Firearms.....			1		2	112		96	10	4	33	60	21	3	112
160. Cutting instruments.....	1	1		1		15		13		2		13	2		15
161. Jumping from high places.....					1		1			1				1	1
162. Crushing.....						7		6	1		4	2	1		7
163. Other suicides.....	1					2		2				1	1		2
B.—Accidents.															
164. Fractures.....	1	5	9	1		21	1	16	5	1	3	3	14	2	22
165. Dislocations.....			1			3		1	2		1		2		3
166a. Accidental gunshot wounds.....						60	1	58	3		44	16	1		61
166b. Injuries by machinery.....	1					34		37	3	4	10	22	2		34
166c. Injuries in mines and quarries.....					2	44	2	30	15	1	17	26	2	1	46
166d. Railroad accidents and injuries.....	13	4	10	1	13	440	13	333	74	57	170	199	44	50	453
166e. Injuries by horses and vehicles.....	10	5	3			131	3	115	17	2	43	76	16		134

166. Other accidental traumas.....	32	64	80	13	2	450	6	375	66	15	124	153	161	8	456
167. Burns and scalds.....	2	1	8	.....	.....	203	3	194	14	8	135	60	18	3	206
168. Burns from corrosive substances.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....	2	.....	.....	.....	2
169. Sunstrokes.....	1	1	4	.....	.....	24	2	19	6	1	9	11	5	1	26
170. Freezing.....	1	.....	.....	.....	.....	9	.....	4	2	3	2	5	1	1	9
171. Electric shock.....	.....	.....	.....	.....	.....	40	.....	38	2	.....	21	17	2	.....	40
172. Accidental drowning.....	1	1	1	.....	5	159	7	134	17	15	113	34	2	12	166
173. Inanition (starvation).....	3	4	.....	.....	.....	14	1	14	1	.....	7	3	5	.....	15
174. Absorption of deleterious gases (non-suicidal).....	4	1	2	.....	.....	42	2	34	9	1	17	17	9	1	44
175. Other acute poisonings.....	2	3	1	.....	.....	70	3	65	7	1	46	15	9	3	73
176. Other external violence.....	4	2	3	.....	.....	225	6	224	5	2	210	13	4	4	231
C.—Homicides.															
176a. Homicides.....	.....	.....	.....	.....	7	110	12	89	17	16	38	61	12	11	122
176b. Mob violence.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
XIV. CAUSES ILL-DEFINED.															
177. Dropsy.....	8	1	7	.....	.....	40	.....	35	4	1	4	19	17	.....	40
178. Sudden death.....	.....	1	1	.....	.....	4	.....	4	.....	.....	.....	4	.....	.....	4
179. Unspecified or ill-defined causes of death.....	3	9	8	1	1	139	8	126	9	12	78	39	26	4	147
XV. STILLBIRTHS.															
180. Stillbirths.....	.....	.....	.....	.....	.....	1,950	79	2,029	.....	.....	2,029	.....	.....	.....	2,029
Grand total.....	2,650	2,435	2,776	392	87	34,804	1,420	31,910	3,575	739	15,265	13,136	7,431	372	36,324

TABLE No. 2 A.

*Recapitulation of Table No. 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition,
Year 1908.*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. General diseases—Epidemic.....	937	1,167	1,008	953	833	735	822	801	834	859	822	765
II. Diseases of the nervous system and organs of special sense.....	376	347	347	350	331	278	296	290	270	267	278	285
III. Diseases of the circulatory system.....	362	454	399	408	359	323	357	347	325	347	404	394
IV. Diseases of the respiratory system.....	515	533	505	346	236	103	72	86	106	157	251	301
V. Diseases of the digestive system.....	235	197	220	242	247	268	584	704	572	448	270	202
VI. Diseases of the genito-urinary system.....	194	173	169	192	192	169	153	166	138	179	178	182
VII. Puerperal diseases.....	25	27	30	34	25	24	33	22	25	25	24	27
VIII. Diseases of the skin and cellular tissues.....	18	16	12	16	23	8	14	12	14	16	10	9
IX. Diseases of the locomotor system.....	5	5	4	2	7	7	5	3	6	8	6	5
X. Malformations.....	30	26	32	27	27	26	32	22	28	26	30	37
XI. Diseases of infancy.....	155	143	168	137	121	126	145	150	139	127	112	131
XII. Diseases of old age.....	83	101	96	67	63	45	32	31	32	26	25	20
XIII. External causes.....	212	172	174	186	242	223	234	251	244	209	196	184
XIV. Causes ill-defined.....	22	35	26	23	19	6	10	14	9	8	5	14
XV. Stillbirths.....	187	188	200	169	161	166	159	179	145	154	163	158
Total.....	3,388	3,594	3,389	3,152	2,866	2,547	2,958	3,068	2,897	2,859	2,792	2,714

TABLE No. 2 A—Continued

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
I. General diseases—Epidemic.....	651	291	211	133	83	299	266	598	807	732	603	578	525	570	588	633	649	660	
II. Diseases of the nervous system and organs of special sense.....	351	89	53	23	21	77	47	59	60	53	86	91	108	149	217	216	289	300	
III. Diseases of the circulatory system.....	64	3	7	5	9	33	58	43	57	65	95	124	126	189	260	343	482	503	
IV. Diseases of the respiratory system.....	772	189	78	27	26	67	40	54	73	65	71	91	79	102	91	129	151	220	
V. Diseases of the digestive system.....	1,494	483	129	55	23	80	57	53	82	80	70	101	105	132	141	150	161	202	
VI. Diseases of the genito-urinary system.....	43	11	9	8	5	13	9	26	44	60	75	93	92	107	143	137	177	219	
VII. Puerperal diseases.....							1	26	73	75	73	43	30	6	1				
VIII. Diseases of the skin and cellular tissue.....	13	2	2			3	1	1	2	4	4	3	2	2	10	13	12	13	
IX. Diseases of the locomotor system.....		5	3	1	1	6	4	4	2	2	3	2	2	2	4	1	1	1	
X. Malformations.....	329	3	3	2	2	1	3			1									
XI. Diseases of infancy.....	1,654																		
XII. Diseases of old age.....																			
XIII. External causes.....	232	53	58	36	25	94	98	154	198	177	172	140	144	149	121	130	104	97	
XIV. Causes ill-defined.....	73	3		2	1		1		7	3	5	5	7	2	7	10	11	13	
XV. Stillbirths.....	2,029																		
Total.....	7,714	1,132	553	292	196	673	535	1,018	1,405	1,318	1,256	1,272	1,226	1,410	1,583	1,762	2,040	2,450	

TABLE No. 2 A.
*Recapitulation of Table No. 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition,
 Year 1908.*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
I. General diseases—Epidemic.....	937	1,167	1,008	953	833	735	822	801	824	859	823	765
II. Diseases of the nervous system and organs of special sense.....	376	337	347	350	321	278	296	280	279	267	278	285
III. Diseases of the circulatory system.....	392	454	399	408	359	323	357	347	325	347	404	384
IV. Diseases of the respiratory system.....	515	553	505	346	226	103	72	85	106	157	251	301
V. Diseases of the digestive system.....	235	197	220	242	247	298	584	704	572	449	279	202
VI. Diseases of the genito-urinary system.....	194	173	169	192	192	169	163	166	138	179	178	182
VII. Puerperal diseases.....	25	27	39	34	23	24	13	22	25	25	24	27
VIII. Diseases of the skin and cellular tissues.....	18	16	12	16	23	8	14	12	14	16	19	9
IX. Diseases of the locomotor system.....	7	5	4	2	7	7	5	3	6	8	6	5
X. Malformations.....	30	26	32	27	27	26	32	23	29	26	30	37
XI. Diseases of infancy.....	155	143	163	137	121	126	145	150	139	127	112	131
XII. Diseases of old age.....	83	101	86	67	43	55	22	31	32	29	25	30
XIII. External causes.....	213	172	174	186	242	223	224	251	244	209	196	194
XIV. Causes ill-defined.....	22	35	26	23	19	6	10	14	9	8	5	14
XV. Stillbirths.....	187	188	200	169	161	166	159	179	145	154	163	153
Total.....	3,388	3,594	3,399	3,152	2,866	2,547	2,958	3,068	2,897	2,869	2,792	2,714

TABLE No. 2 A—Continued

	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
I. General diseases—Epidemic.....	651	291	211	133	83	299	266	598	807	733	603	578	525	570	588	633	649	690
II. Diseases of the nervous system and organs of special sense.....	351	89	52	23	21	77	47	59	60	53	86	91	108	149	217	216	299	300
III. Diseases of the circulatory system.....	64	3	7	5	9	33	58	43	57	65	95	124	136	189	260	342	433	593
IV. Diseases of the respiratory system.....	772	189	78	27	26	67	40	54	73	65	71	91	79	102	91	129	151	220
V. Diseases of the digestive system.....	1,494	453	123	55	23	80	57	52	83	80	70	101	105	132	141	150	161	202
VI. Diseases of the genito-urinary system.....	43	11	9	8	5	13	9	26	44	60	75	93	92	107	143	137	177	219
VII. Puerperal diseases.....	13	2	2	.....	.....	3	1	1	2	4	3	4	8	2	10	13	12	1
VIII. Diseases of the skin and cellular tissues.....	9	5	3	1	1	6	4	4	2	3	3	2	2	2	4	1	1	.....
IX. Diseases of the locomotor system.....	320	3	3	2	2	1	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
X. Malformations.....	1,654	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
XI. Diseases of infancy.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
XII. Diseases of old age.....	232	53	58	36	25	94	98	154	198	177	172	140	144	149	121	130	104	97
XIII. External causes.....	73	3	.....	2	1	.....	1	1	7	3	5	5	7	2	7	10	11	13
XIV. Causes ill-defined.....	2,020	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
XV. Stillbirths.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	7,714	1,132	552	262	196	673	585	1,018	1,405	1,318	1,256	1,272	1,226	1,410	1,583	1,762	2,040	2,450

TABLE No. 2 A—Continued.

	70 to 75	75 to 80	80 to 90	90 and over	Unknown	White	Colored	American	Foreign	N. R.	Single	Married	Widowed	N. R.	Total
I. General diseases—Epidemic.....	605	480	468	51	15	10,028	508	9,414	932	190	3,973	4,596	1,885	82	10,536
II. Diseases of the nervous system and organs of sense.....	433	400	423	45	10	3,968	96	3,180	428	76	1,086	1,583	1,031	45	3,064
III. Diseases of the circulatory system.....	671	611	595	63	13	4,537	162	3,674	702	123	1,533	2,300	1,399	47	3,499
IV. Diseases of the respiratory system.....	253	252	317	35	9	3,023	193	2,789	352	50	1,469	966	738	28	3,321
V. Diseases of the digestive system.....	185	191	222	32	1	4,090	138	3,866	268	64	2,575	1,046	594	23	4,225
VI. Diseases of the genito-urinary system.....	290	255	252	27	...	2,018	77	1,729	325	41	305	1,123	647	20	2,095
VII. Puerperal diseases.....	...	...	...	...	1	315	15	314	12	4	17	304	8	1	320
VIII. Diseases of the skin and cellular tissues.....	20	19	35	8	2	168	9	145	28	4	31	72	70	4	177
IX. Diseases of the locomotor system.....	3	3	2	1	...	59	6	54	8	3	44	14	6	1	85
X. Malformations.....	...	...	...	...	...	340	4	342	1	1	343	1	...	...	344
XI. Diseases of infancy.....	...	...	...	...	...	1,692	52	1,652	2	...	1,654	...	...	...	1,654
XII. Diseases of old age.....	59	117	320	113	2	625	9	439	172	23	...	146	431	13	634
XIII. External causes.....	85	96	125	16	33	2,463	64	2,078	302	147	1,120	994	369	104	2,527
XIV. Causes ill-defined.....	11	11	16	1	1	183	8	165	13	13	...	62	43	4	191
XV. Stillbirths.....	...	...	...	...	...	1,950	79	2,029	...	...	2,029	...	...	...	2,029
Total.....	2,650	2,436	2,776	362	87	34,394	1,420	31,910	3,575	739	15,265	13,186	7,431	872	36,324

TABLE No. 3
Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1908.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Adams.....	Total.....	16	24	24	24	13	15	14	19	12	28	14	12
	Male.....	8	15	13	15	6	4	9	11	7	15	9	5
	Female.....	8	9	11	9	7	11	5	8	5	13	5	7
Allen.....	Total.....	122	104	121	100	104	81	83	108	96	80	82	93
	Male.....	66	43	58	55	54	33	42	53	53	39	36	51
	Female.....	56	61	63	45	50	48	41	47	43	41	46	42
Bartholomew.....	Total.....	24	32	27	30	37	14	25	33	22	32	21	23
	Male.....	15	8	14	19	24	4	13	19	12	12	9	14
	Female.....	9	24	13	11	13	10	12	14	10	20	12	9
Benton.....	Total.....	3	14	18	14	6	7	5	12	12	9	11	5
	Male.....	3	8	8	8	3	4	2	6	6	5	5	4
	Female.....	.....	6	10	6	3	3	3	6	6	4	6	1
Blackford.....	Total.....	14	15	24	13	9	16	10	16	10	19	14	19
	Male.....	8	7	14	6	6	11	4	9	5	14	10	8
	Female.....	6	8	10	7	3	5	6	7	5	5	4	11
Boone.....	Total.....	20	33	37	25	36	21	19	35	31	22	27	25
	Male.....	13	17	18	13	17	18	12	17	16	13	16	13
	Female.....	17	16	19	12	19	13	7	18	15	9	11	12
Brown.....	Total.....	5	4	11	11	9	7	7	6	10	3	8	4
	Male.....	4	2	6	7	7	1	4	4	1	2	6	3
	Female.....	1	2	5	4	2	6	3	2	9	1	2	1
Carroll.....	Total.....	21	20	25	26	25	12	24	16	20	15	17	20
	Male.....	13	18	12	11	13	8	12	10	18	7	7	11
	Female.....	8	12	13	15	12	5	12	6	12	8	10	9
Cass.....	Total.....	49	55	54	51	60	48	49	46	54	42	49	40
	Male.....	20	25	23	20	20	20	29	15	27	22	23	21
	Female.....	19	30	31	31	40	28	20	31	27	20	26	19

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Clark.....	Total.....	43	51	41	40	46	39	41	19	35	36	40	42
	Male.....	23	27	24	20	32	10	18	8	19	14	14	25
	Female.....	20	24	15	19	14	19	23	11	16	22	26	17
Clay.....	Total.....	34	40	33	41	33	30	40	47	40	37	30	39
	Male.....	18	23	14	18	20	15	25	26	15	18	11	19
	Female.....	16	17	19	23	13	15	24	21	25	19	19	10
Clinton.....	Total.....	32	43	30	32	37	21	42	36	26	29	30	33
	Male.....	22	30	17	18	26	7	24	26	10	13	19	17
	Female.....	10	23	22	14	17	14	18	11	16	16	20	16
Crawford.....	Total.....	15	18	15	16	13	10	10	10	17	8	13	16
	Male.....	7	15	7	10	7	4	5	6	7	3	8	7
	Female.....	8	3	8	6	6	4	5	4	10	5	5	9
Davies.....	Total.....	29	50	28	27	28	32	33	20	19	23	21	22
	Male.....	16	24	16	22	13	15	24	10	13	13	13	15
	Female.....	11	26	12	15	15	17	9	10	6	10	8	7
Dearborn.....	Total.....	27	39	33	25	33	16	20	23	18	13	25	23
	Male.....	15	17	20	19	18	9	10	12	9	7	17	6
	Female.....	12	22	13	6	15	7	10	11	9	6	8	17
Deatur.....	Total.....	22	32	38	26	15	10	26	20	18	15	16	25
	Male.....	12	18	13	12	5	6	11	17	9	6	6	16
	Female.....	10	14	13	14	10	4	15	13	9	9	10	9
Detroit.....	Total.....	27	38	21	26	27	19	32	34	25	27	23	19
	Male.....	16	25	8	16	10	10	18	14	14	15	10	6
	Female.....	11	13	13	10	17	9	14	16	11	12	13	13
Dodge.....	Total.....	58	61	67	66	60	43	55	55	50	57	57	69
	Male.....	27	30	34	30	30	23	32	28	28	28	28	35
	Female.....	21	31	33	27	30	26	23	26	22	29	21	34
Dodge.....	Total.....	24	30	17	14	11	11	11	15	14	20	20	15
	Male.....	21	15	8	8	6	4	6	6	6	13	10	9
	Female.....	13	15	9	11	5	7	5	9	8	8	10	6

Elkhart.....	Total.....	61	58	49	70	49	39	61	58	39	82	46	55
	Male.....	35	36	25	32	28	28	32	30	30	40	24	21
	Female.....	26	22	24	38	21	20	29	28	15	42	22	34
Fayette.....	Total.....	22	18	11	14	15	18	14	18	20	19	17	15
	Male.....	11	10	5	6	6	6	8	13	13	8	11	7
	Female.....	11	8	6	4	10	12	6	5	7	11	6	8
Floyd.....	Total.....	73	54	44	38	37	38	31	33	29	37	44	33
	Male.....	40	29	25	17	16	21	16	20	15	19	28	15
	Female.....	33	25	19	21	21	17	15	13	14	18	16	18
Fountain.....	Total.....	20	22	22	20	25	18	19	27	20	19	19	17
	Male.....	9	14	9	8	13	8	11	19	7	12	12	4
	Female.....	11	8	13	8	10	10	8	8	13	7	7	13
Franklin.....	Total.....	17	17	23	20	16	15	23	19	19	18	12	20
	Male.....	10	8	8	14	8	4	13	11	6	6	5	11
	Female.....	7	9	15	6	8	11	9	8	13	12	7	9
Fulton.....	Total.....	20	20	17	20	16	15	18	15	16	15	12	17
	Male.....	10	10	11	9	7	7	11	9	8	8	4	11
	Female.....	10	10	6	11	9	8	7	6	8	7	8	6
Gibson.....	Total.....	38	44	28	27	27	34	44	49	35	20	41	28
	Male.....	22	27	16	16	12	18	23	28	20	15	16	13
	Female.....	16	17	12	7	15	16	21	21	15	14	25	13
Grant.....	Total.....	99	53	50	75	58	63	47	57	90	73	51	77
	Male.....	45	30	30	43	33	42	32	32	51	49	31	46
	Female.....	54	23	20	33	25	21	25	25	39	25	20	29
Greene.....	Total.....	38	57	44	40	36	27	33	40	41	27	41	29
	Male.....	24	24	25	16	23	14	14	12	14	16	23	17
	Female.....	14	33	19	24	13	13	19	28	27	11	18	13
Hamilton.....	Total.....	30	33	29	27	28	27	27	26	22	35	28	28
	Male.....	13	19	17	19	19	15	15	13	12	21	15	18
	Female.....	17	14	12	8	9	12	12	13	10	14	13	10
Hancock.....	Total.....	16	25	30	35	22	17	32	26	29	27	17	17
	Male.....	7	13	15	14	13	8	16	15	19	15	10	8
	Female.....	9	12	15	11	10	9	16	10	10	12	7	9
Harrison.....	Total.....	29	23	27	17	13	10	13	17	17	16	33	14
	Male.....	19	9	15	9	6	4	6	10	7	9	12	8
	Female.....	10	13	12	8	10	6	7	7	10	7	20	6
Headricks.....	Total.....	23	22	35	25	24	22	17	18	28	24	33	23
	Male.....	13	14	11	12	13	11	10	5	16	14	18	14
	Female.....	10	8	24	13	11	11	7	13	12	10	15	9

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Carr	Total	43	51	41	40	46	29	41	19	35	26	40	42
	Male	23	27	26	20	32	20	15	8	19	14	25	25
	Female	20	24	15	19	14	19	23	11	16	23	15	17
Clay	Total	34	40	33	41	33	30	40	47	40	37	20	29
	Male	18	23	14	16	20	15	25	26	26	18	11	19
	Female	16	17	19	23	13	15	24	21	25	19	19	10
Clinton	Total	22	43	39	32	37	21	42	36	26	29	20	33
	Male	22	20	17	18	20	7	24	25	25	10	19	17
	Female	10	23	22	14	17	14	18	11	16	16	20	16
Oswald	Total	15	18	15	16	12	10	10	10	17	8	12	16
	Male	7	15	7	10	7	4	5	6	7	3	7	7
	Female	8	3	8	6	6	4	5	4	10	5	5	9
Davies	Total	29	50	28	27	28	22	33	20	19	28	21	22
	Male	18	24	16	22	13	15	24	10	13	13	13	15
	Female	11	26	12	15	15	7	9	10	6	15	8	7
Dearborn	Total	27	39	33	25	33	16	20	23	18	12	26	23
	Male	15	17	20	19	18	9	10	12	9	7	17	6
	Female	12	22	13	6	15	7	10	11	9	5	9	17
Deerstar	Total	22	32	26	26	15	10	26	20	18	15	16	25
	Male	12	13	18	12	5	6	11	17	9	6	6	16
	Female	10	14	18	14	10	4	15	13	9	9	10	9
Detroit	Total	27	38	21	26	27	19	32	34	25	27	22	19
	Male	16	25	8	16	10	10	16	18	14	15	10	6
	Female	11	13	13	10	17	9	14	16	11	12	12	13
Delaware	Total	58	61	67	66	60	46	55	55	50	57	57	69
	Male	27	30	34	29	30	23	23	26	28	23	26	25
	Female	21	31	33	27	30	26	23	26	22	36	21	34
Detroit	Total	34	30	17	14	11	11	11	15	14	14	20	15
	Male	21	15	8	3	6	4	5	6	6	13	10	9
	Female	13	15	9	11	5	7	6	9	8	8	10	6

Elkhart.....	Total.....	61	58	49	70	49	39	61	58	39	46	55
Male.....	Male.....	35	35	25	33	25	19	33	33	23	24	21
Female.....	Female.....	26	22	24	38	24	20	28	26	15	22	34
Fayette.....	Total.....	22	18	11	14	11	18	14	18	20	17	15
Male.....	Male.....	11	10	5	5	5	6	8	8	13	11	7
Female.....	Female.....	11	8	6	4	6	12	6	5	7	6	8
Floyd.....	Total.....	73	54	44	38	38	38	31	33	29	37	33
Male.....	Male.....	40	29	25	17	16	21	16	20	15	19	15
Female.....	Female.....	33	25	19	21	21	17	15	13	14	18	18
Fountain.....	Total.....	20	22	22	30	26	18	19	27	20	19	17
Male.....	Male.....	9	14	9	22	13	11	11	19	7	12	4
Female.....	Female.....	11	8	13	8	12	10	8	8	13	7	13
Franklin.....	Total.....	17	17	23	20	16	15	22	19	19	18	20
Male.....	Male.....	10	8	8	14	8	11	13	11	6	4	11
Female.....	Female.....	7	9	15	6	8	4	9	8	13	7	9
Fulton.....	Total.....	20	20	17	20	16	15	18	15	16	15	17
Male.....	Male.....	10	10	11	9	7	7	11	9	8	4	11
Female.....	Female.....	10	10	6	11	9	8	7	6	8	8	6
Gibson.....	Total.....	38	44	28	27	27	34	44	49	35	41	26
Male.....	Male.....	22	27	13	20	12	13	13	23	20	13	12
Female.....	Female.....	16	17	15	7	15	16	21	26	15	28	13
Grant.....	Total.....	99	53	50	75	58	63	47	57	90	51	77
Male.....	Male.....	45	30	30	42	33	42	22	32	51	31	43
Female.....	Female.....	54	23	20	33	25	21	25	25	39	20	34
Greene.....	Total.....	38	57	44	40	36	27	33	40	41	41	29
Male.....	Male.....	24	24	25	24	23	14	14	12	14	16	17
Female.....	Female.....	14	33	19	24	13	13	19	28	27	11	13
Hamilton.....	Total.....	30	33	29	27	28	27	27	26	22	28	28
Male.....	Male.....	13	19	17	19	19	15	15	13	13	21	18
Female.....	Female.....	17	14	12	8	9	12	12	13	10	14	10
Hancock.....	Total.....	16	25	30	25	22	17	32	25	29	27	17
Male.....	Male.....	7	13	15	14	13	8	16	15	19	15	8
Female.....	Female.....	9	12	15	11	10	9	16	10	10	12	9
Harrison.....	Total.....	29	22	27	17	23	10	13	17	17	16	14
Male.....	Male.....	19	9	15	9	13	6	6	10	7	9	18
Female.....	Female.....	10	13	12	8	10	4	7	7	10	7	6
Hendricks.....	Total.....	23	23	35	25	24	22	17	18	28	24	23
Male.....	Male.....	13	14	11	12	13	11	10	5	16	14	14
Female.....	Female.....	10	8	24	13	11	11	7	13	12	10	9

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Henry	Total	39	39	33	40	26	20	35	28	30	27	24	20
	Male	21	19	19	18	13	13	16	14	14	14	12	9
	Female	18	20	14	22	13	18	19	14	16	13	12	11
Howard	Total	50	50	42	43	51	30	25	35	36	30	26	31
	Male	32	28	23	22	25	19	16	16	20	14	13	17
	Female	17	22	19	21	26	11	9	19	16	16	13	14
Huntington	Total	29	38	36	22	30	18	38	30	39	22	32	22
	Male	16	19	17	11	10	9	20	16	22	11	19	14
	Female	13	19	19	11	20	9	18	14	17	11	13	8
Jackson	Total	27	32	30	25	27	28	30	22	40	30	26	25
	Male	19	13	9	14	10	15	14	11	21	17	20	19
	Female	8	14	21	11	17	13	16	11	19	13	16	15
Jasper	Total	15	23	17	9	14	9	12	14	8	19	12	6
	Male	8	14	11	3	7	3	7	8	4	9	7	4
	Female	7	9	6	6	7	6	5	6	4	10	5	2
Jay	Total	25	33	36	30	28	16	20	28	24	28	29	19
	Male	17	19	19	16	12	7	11	13	13	13	22	12
	Female	8	14	17	14	16	9	9	15	11	15	7	7
Jefferson	Total	48	39	32	33	20	23	26	34	21	34	34	22
	Male	23	21	15	20	7	16	15	20	10	17	17	13
	Female	25	18	17	13	13	7	11	14	11	17	17	10
Jennings	Total	16	21	19	27	12	11	21	17	23	13	12	13
	Male	9	9	7	16	3	4	10	9	11	7	8	7
	Female	7	12	12	11	9	4	11	8	12	6	4	6
Johnson	Total	24	36	28	20	20	24	34	19	19	19	13	21
	Male	13	12	10	7	9	9	18	10	18	7	6	11
	Female	11	24	18	13	11	15	16	9	11	12	7	10

Knox.....	Total.....	53	48	52	53	56	39	52	58	50	44	54	43
	Male.....	24	20	30	30	23	15	30	31	27	18	31	24
	Female.....	29	22	22	23	33	24	22	27	23	26	23	19
Kosciusko.....	Total.....	46	22	36	33	29	19	37	27	21	35	33	33
	Male.....	18	13	23	14	16	8	27	16	12	20	18	19
	Female.....	28	10	13	19	13	11	14	11	9	15	15	14
Lagrange.....	Total.....	27	22	21	16	11	12	15	10	13	17	12	12
	Male.....	17	14	8	8	4	6	8	6	5	5	13	5
	Female.....	10	8	13	8	7	6	7	4	8	12	8	7
Lake.....	Total.....	77	100	111	98	75	68	93	109	88	76	66	83
	Male.....	52	60	69	65	46	48	56	65	55	41	41	51
	Female.....	25	40	42	33	29	20	37	44	33	35	25	32
Laporte.....	Total.....	57	56	40	69	50	40	41	56	49	42	55	47
	Male.....	26	30	21	35	33	21	18	33	32	22	34	33
	Female.....	31	26	19	34	17	19	23	23	17	20	21	14
Lawrence.....	Total.....	42	38	44	31	36	36	35	39	27	19	38	35
	Male.....	26	21	21	6	16	14	15	19	8	11	13	19
	Female.....	16	17	23	22	20	22	20	20	19	8	20	16
Madison.....	Total.....	67	61	71	77	62	53	55	70	62	61	67	58
	Male.....	31	24	37	46	34	31	32	42	30	32	32	34
	Female.....	36	37	34	31	28	22	23	28	32	29	35	24
Marion.....	Total.....	367	332	356	327	278	292	314	321	278	314	271	289
	Male.....	210	180	200	181	138	168	172	173	134	174	160	169
	Female.....	157	152	156	146	140	124	142	148	144	140	111	120
Marshall.....	Total.....	14	29	22	30	23	28	27	19	33	23	25	23
	Male.....	6	15	12	15	8	16	15	10	19	13	14	10
	Female.....	8	14	10	15	15	12	12	9	14	10	11	13
Martin.....	Total.....	23	16	19	14	12	6	20	16	11	21	7	8
	Male.....	10	9	8	8	4	3	7	11	7	10	3	6
	Female.....	13	7	11	6	8	3	13	5	4	11	4	3
Miami.....	Total.....	45	35	42	23	24	37	22	19	28	34	31	27
	Male.....	27	19	22	12	12	19	12	6	13	20	12	15
	Female.....	18	16	20	11	12	18	10	13	15	14	19	13
Monroe.....	Total.....	33	24	39	24	23	23	26	31	30	24	24	17
	Male.....	19	12	24	16	19	11	10	15	15	12	15	7
	Female.....	15	12	15	8	13	12	16	16	15	12	9	10
Montgomery.....	Total.....	36	44	34	27	31	30	33	29	30	26	26	34
	Male.....	20	23	20	15	19	14	18	12	18	14	8	19
	Female.....	16	21	14	12	12	16	15	17	13	12	18	15

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Morgan.	Total.	22	35	36	22	22	32	23	31	28	17	31	15
	Male.	14	19	18	8	15	13	14	19	16	7	13	6
	Female.	8	16	18	14	7	19	14	12	12	10	18	9
Newton.	Total.	12	12	8	7	7	7	7	3	4	14	13	5
	Male.	3	6	2	1	4	4	3	2	4	3	4	4
	Female.	9	6	6	6	3	3	4	1	1	6	9	1
Noble.	Total.	23	36	26	30	15	23	22	31	33	31	25	25
	Male.	14	18	16	19	7	16	11	19	20	18	15	11
	Female.	9	18	8	11	8	7	11	12	13	13	10	14
Ohio.	Total.	4	4	5	8	6	6	6	6	3	6	6	8
	Male.	1	2	2	4	4	4	4	1	2	2	2	3
	Female.	3	2	3	4	2	2	2	5	1	4	4	5
Orange.	Total.	24	32	21	20	14	10	13	24	20	15	15	18
	Male.	11	14	11	12	6	5	8	13	11	9	9	6
	Female.	13	18	10	8	8	5	5	11	9	6	6	12
Owen.	Total.	16	18	10	11	9	9	14	13	17	16	11	15
	Male.	10	14	4	4	6	3	7	6	10	10	6	10
	Female.	6	4	6	7	3	6	7	7	7	6	5	5
Parke.	Total.	24	30	22	21	24	27	18	24	32	23	24	23
	Male.	10	17	10	15	16	14	9	12	15	13	11	10
	Female.	14	13	12	6	8	13	9	12	17	10	13	13
Perry.	Total.	25	36	10	15	10	19	15	18	23	10	20	10
	Male.	8	21	6	8	4	8	7	7	10	6	11	6
	Female.	17	15	4	7	6	11	8	9	13	5	9	4
Pike.	Total.	17	38	23	23	12	23	23	19	32	21	29	20
	Male.	11	11	10	11	11	11	14	10	15	11	14	10
	Female.	6	27	13	12	1	12	13	9	17	10	15	10
Porter.	Total.	31	23	23	21	19	15	23	23	25	10	18	14
	Male.	14	14	12	12	9	7	10	12	11	8	8	11
	Female.	9	9	10	9	10	8	13	11	14	2	10	7

Perry.....	Total.....	33	33	37	32	22	17	26	22	26	16	19	23
	Male.....	16	20	24	14	13	10	13	12	13	10	9	6
Pike.....	Total.....	17	13	13	18	10	6	4	15	13	5	10	17
	Male.....	9	6	8	10	9	6	2	8	6	3	4	8
Pike.....	Total.....	10	4	7	4	2	5	2	7	7	3	4	7
	Male.....	10	4	7	4	2	5	2	7	7	3	4	7
Putnam.....	Total.....	21	31	35	16	38	23	31	20	26	17	11	24
	Male.....	11	15	17	9	16	13	17	13	11	10	5	14
Randolph.....	Total.....	10	16	18	7	22	10	14	7	15	7	6	10
	Male.....	10	16	18	7	22	10	14	7	15	7	6	10
Randolph.....	Total.....	28	25	23	38	31	33	29	22	26	28	23	26
	Male.....	13	9	14	16	17	17	14	13	15	15	10	13
Ripley.....	Total.....	15	16	9	22	19	16	15	19	11	22	13	13
	Male.....	15	16	9	22	19	16	15	19	11	22	13	13
Ripley.....	Total.....	26	42	30	19	17	16	12	18	16	15	17	20
	Male.....	15	21	17	9	8	7	3	7	8	7	10	9
Rush.....	Total.....	11	21	13	10	9	9	9	11	8	8	7	11
	Male.....	11	21	13	10	9	9	9	11	8	8	7	11
Rush.....	Total.....	24	24	23	21	19	19	19	34	18	18	12	24
	Male.....	6	11	13	11	10	11	9	13	10	8	7	13
Scott.....	Total.....	18	13	10	10	9	8	10	21	8	10	5	11
	Male.....	18	13	10	10	9	8	10	21	8	10	5	11
Scott.....	Total.....	10	16	14	7	4	5	8	7	6	10	6	10
	Male.....	5	8	6	3	2	2	2	4	6	5	1	7
Shelby.....	Total.....	5	8	8	4	2	3	6	3	6	5	5	3
	Male.....	5	8	8	4	2	3	6	3	6	5	5	3
Shelby.....	Total.....	36	32	43	27	27	20	23	39	30	31	24	23
	Male.....	18	24	17	13	10	8	12	15	13	19	11	5
Spencer.....	Total.....	18	8	26	15	17	12	11	24	12	12	13	17
	Male.....	18	8	26	15	17	12	11	24	12	12	13	17
Spencer.....	Total.....	15	29	35	19	17	24	18	15	24	21	15	21
	Male.....	4	16	19	13	5	10	7	8	9	10	5	13
Starr.....	Total.....	11	13	16	6	12	14	11	7	15	11	10	8
	Male.....	11	13	16	6	12	14	11	7	15	11	10	8
Starr.....	Total.....	13	15	5	14	11	7	8	7	11	14	13	8
	Male.....	9	8	4	9	7	4	5	4	10	6	8	4
Starr.....	Total.....	4	7	1	5	4	3	3	3	1	8	4	4
	Male.....	4	7	1	5	4	3	3	3	1	8	4	4
Stearns.....	Total.....	17	17	21	21	13	12	11	14	20	19	9	17
	Male.....	9	9	10	7	4	6	7	7	9	8	5	12
Stearns.....	Total.....	8	8	11	14	9	6	4	7	11	10	4	5
	Male.....	8	8	11	14	9	6	4	7	11	10	4	5
St. Joseph.....	Total.....	104	92	100	92	70	75	76	104	90	88	86	70
	Male.....	50	41	41	46	47	41	40	67	44	46	33	37
	Female.....	54	51	59	46	23	34	31	37	46	40	33	36

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sullivan.....	Total.....	36	43	38	24	24	21	43	34	44	33	37	33
	Male.....	14	22	24	15	15	9	21	19	16	17	26	15
	Female.....	22	21	14	9	9	12	22	15	28	16	11	18
Switzerland.....	Total.....	21	19	23	18	12	12	16	18	9	12	11	13
	Male.....	14	10	11	11	7	6	8	12	6	10	6	1
	Female.....	7	9	17	7	5	6	8	6	3	2	5	12
Tippecanoe.....	Total.....	71	59	51	55	44	56	49	61	49	65	55	51
	Male.....	38	31	29	27	26	33	23	35	25	38	26	22
	Female.....	33	28	22	28	18	23	26	26	24	27	29	29
Tipton.....	Total.....	23	19	14	22	23	13	22	23	16	11	11	17
	Male.....	15	12	9	12	12	6	11	11	7	6	6	10
	Female.....	8	7	5	10	10	7	11	12	9	5	5	7
Union.....	Total.....	3	10	9	5	5	8	2	9	3	9	7	5
	Male.....	2	4	6	1	2	2	1	8	3	7	3	4
	Female.....	1	6	3	4	3	6	1	1	.....	2	4	1
Vanderburgh.....	Total.....	134	147	109	100	89	96	105	101	75	80	87	97
	Male.....	68	65	57	53	44	53	51	59	39	39	46	60
	Female.....	66	82	52	47	45	43	54	42	36	34	46	37
Vermillion.....	Total.....	16	25	31	26	20	13	46	22	21	21	18	19
	Male.....	11	11	16	14	16	11	20	10	13	13	10	10
	Female.....	5	14	15	12	4	2	26	12	8	8	8	9
Vigo.....	Total.....	115	122	103	116	114	75	97	95	84	100	92	85
	Male.....	62	62	63	68	70	47	56	56	56	52	52	43
	Female.....	53	60	40	48	44	28	41	51	44	44	40	42
Wabash.....	Total.....	31	35	37	27	22	21	24	24	24	22	22	22
	Male.....	16	21	18	14	12	13	14	13	17	14	10	18
	Female.....	15	14	19	13	10	8	10	11	7	8	12	4
Warren.....	Total.....	12	18	13	6	8	7	8	11	12	9	17	10
	Male.....	7	7	4	4	5	4	4	5	5	5	11	5
	Female.....	5	11	9	2	3	.....	4	6	7	4	6	5

Warwick.....	Total.....	23	31	20	28	25	17	33	37	24	21	21	15
Male.....	Male.....	8	20	13	15	11	13	15	11	13	10	10	5
Female.....	Female.....	14	11	7	13	14	5	18	16	11	11	11	10
Washington.....	Total.....	31	25	32	23	18	26	26	31	13	18	20	25
Male.....	Male.....	13	13	21	14	6	17	11	11	7	7	13	10
Female.....	Female.....	9	12	11	9	12	9	15	10	6	11	7	15
Wayne.....	Total.....	54	50	43	48	52	53	48	40	50	48	46	56
Male.....	Male.....	23	30	24	19	30	34	26	20	23	26	23	33
Female.....	Female.....	31	20	19	29	22	19	23	20	27	23	24	23
Wells.....	Total.....	27	23	18	17	20	10	23	16	20	18	17	19
Male.....	Male.....	17	12	9	9	7	7	13	7	10	10	4	9
Female.....	Female.....	10	11	11	8	13	3	4	9	10	8	13	10
White.....	Total.....	19	19	27	16	12	14	23	10	14	16	12	15
Male.....	Male.....	9	7	17	8	7	9	14	4	6	10	6	6
Female.....	Female.....	10	11	10	8	5	5	8	6	8	6	6	9
Whitley.....	Total.....	18	24	12	12	19	15	18	16	14	14	14	12
Male.....	Male.....	9	16	5	8	8	10	9	6	8	6	9	6
Female.....	Female.....	9	8	7	4	11	5	9	10	6	8	5	6
Total males.....	1,845	1,871	1,783	1,699	1,699	1,606	1,850	1,554	1,632	1,468	1,514	1,496	1,451
Total females.....	1,543	1,723	1,596	1,453	1,800	1,404	1,167	1,404	1,436	1,404	1,345	1,306	1,263
Grand total.....	3,388	3,594	3,379	3,152	2,806	2,647	2,647	2,958	3,068	2,897	2,859	2,792	2,714

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1908.

COUNTIES.	Sex.	0	1	2	3	4	5 10	10 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70
Adams.....	Total.....	62	10	2	2	.....	5	4	7	16	3	3	3	6	5	6	8	14	14
	Male.....	35	5	.....	1	.....	2	2	2	8	1	2	.....	4	2	6	6	5	10
	Female.....	27	5	2	1	.....	3	2	5	8	2	1	3	2	3	.....	2	9	4
Allen.....	Total.....	243	33	14	6	2	21	23	31	59	58	40	42	34	49	60	64	51	70
	Male.....	137	18	7	4	.....	12	12	12	33	19	17	19	21	24	28	30	27	30
	Female.....	106	15	7	2	2	9	11	19	26	39	23	23	13	25	32	34	24	40
Bartholomew.....	Total.....	67	8	5	1	.....	6	6	10	13	17	9	6	6	11	19	21	18	24
	Male.....	37	5	3	1	.....	2	2	4	3	6	4	2	1	5	8	14	10	11
	Female.....	30	3	2	.....	.....	4	2	7	7	7	5	4	5	6	11	7	5	13
Benton.....	Total.....	32	5	4	.....	2	2	1	2	4	4	4	.....	2	2	4	8	6	5
	Male.....	21	3	2	.....	1	1	.....	.....	.....	2	2	.....	1	1	3	4	4	3
	Female.....	11	2	2	.....	1	2	.....	4	4	2	2	.....	1	1	1	4	2	2
Blackford.....	Total.....	50	6	6	1	.....	1	.....	2	5	8	3	6	10	7	6	7	8	10
	Male.....	24	5	4	1	.....	1	.....	1	3	4	3	2	5	3	5	5	7	6
	Female.....	26	1	2	.....	.....	.....	1	1	2	4	.....	4	5	4	3	2	1	4
Boone.....	Total.....	62	11	5	2	1	2	5	10	7	9	11	7	12	11	13	16	23	20
	Male.....	34	7	3	.....	.....	2	3	6	3	5	4	3	6	5	9	7	8	10
	Female.....	28	4	2	2	1	.....	2	4	4	4	7	4	6	6	4	9	14	10
Brown.....	Total.....	23	3	3	.....	.....	3	1	8	3	3	1	1	2	1	1	1	4	5
	Male.....	11	3	2	.....	.....	2	1	2	1	2	1	.....	1	.....	1	1	3	4
	Female.....	12	.....	1	.....	.....	1	.....	6	2	2	.....	1	1	.....	.....	.....	1	1
Carroll.....	Total.....	50	3	2	3	.....	3	9	10	8	8	12	6	10	9	11	11	21	18
	Male.....	29	2	2	2	.....	1	1	5	5	5	7	3	6	6	6	8	12	12
	Female.....	21	1	1	1	.....	2	8	5	3	3	5	3	4	3	5	3	9	6

Cass.....	Total.....	87	14	7	1	10	7	12	22	23	19	30	36	38	23	37	39	39
Male.....	Male.....	48	4	2	1	6	4	7	7	15	8	13	22	19	13	23	22	22
Female.....	Female.....	39	10	5	.....	4	3	5	.....	.....	11	17	14	19	10	14	17	17
Clark.....	Total.....	85	11	3	3	4	14	13	19	21	15	16	10	24	24	25	35	29
Male.....	Male.....	48	1	1	2	3	10	8	14	12	6	6	4	8	16	13	13	17
Female.....	Female.....	37	7	2	1	1	4	5	7	7	9	9	6	16	8	12	10	12
Clay.....	Total.....	94	24	9	6	13	6	12	11	16	18	19	11	17	18	11	37	31
Male.....	Male.....	55	10	3	5	5	3	5	2	7	9	12	6	13	8	7	18	17
Female.....	Female.....	39	14	7	1	8	4	7	9	9	7	7	6	4	10	4	19	14
Clinton.....	Total.....	85	22	10	3	8	7	12	15	17	10	12	6	17	17	20	20	23
Male.....	Male.....	41	7	3	2	3	2	7	7	10	6	3	2	8	5	7	10	27
Female.....	Female.....	44	5	2	1	6	5	5	8	7	4	9	4	9	12	13	10	6
Crawford.....	Total.....	23	8	3	5	1	5	9	7	7	11	4	8	3	6	5	9	7
Male.....	Male.....	14	5	2	2	2	4	4	3	1	5	1	4	2	2	4	4	7
Female.....	Female.....	9	3	1	3	1	1	5	4	6	6	3	4	1	4	1	5	.....
Davies.....	Total.....	86	20	3	8	6	7	7	13	11	14	7	11	7	13	19	17	21
Male.....	Male.....	50	12	2	3	3	3	5	10	7	5	5	7	6	9	14	9	11
Female.....	Female.....	36	8	1	6	3	4	2	3	4	9	2	4	2	7	5	8	10
Dearborn.....	Total.....	36	10	5	1	3	4	8	10	12	10	11	8	11	11	13	20	24
Male.....	Male.....	17	8	2	.....	3	2	6	5	7	8	3	4	6	8	5	7	15
Female.....	Female.....	19	2	3	1	.....	2	2	5	5	3	2	4	5	3	8	13	9
Deatur.....	Total.....	44	12	2	2	6	6	6	8	13	6	4	4	11	14	10	20	17
Male.....	Male.....	27	4	2	2	1	5	3	4	3	3	1	1	4	6	7	16	9
Female.....	Female.....	17	9	.....	1	1	1	3	4	7	3	3	3	7	8	3	4	8
Dehalb.....	Total.....	61	10	3	.....	4	6	4	10	5	9	9	10	11	20	23	17	25
Male.....	Male.....	34	6	2	.....	2	3	2	6	1	4	4	4	4	8	14	8	13
Female.....	Female.....	27	4	1	.....	2	3	2	4	4	5	5	6	7	12	9	9	12
Delaware.....	Total.....	171	32	10	3	14	8	23	27	25	24	26	25	29	24	41	33	43
Male.....	Male.....	89	6	2	2	5	4	11	14	11	11	13	15	16	14	26	17	28
Female.....	Female.....	83	15	4	1	9	4	12	13	14	13	15	10	13	10	15	16	20
Dubois.....	Total.....	52	11	5	2	6	5	6	6	6	5	8	5	6	10	12	16	10
Male.....	Male.....	29	5	2	1	2	1	2	1	3	2	2	1	3	5	4	12	6
Female.....	Female.....	23	6	3	1	4	4	4	5	3	3	6	4	3	5	8	4	4
Elthart.....	Total.....	129	20	6	6	10	16	10	21	26	23	23	16	22	39	37	42	53
Male.....	Male.....	67	9	3	5	6	8	7	12	9	12	10	8	17	23	23	24	34
Female.....	Female.....	62	11	3	1	4	8	3	9	16	11	13	6	14	22	14	19	26

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65
Fayette.....	Total.....	38	5	5	2	.....	3	2	4	7	7	5	5	8	9	8	11	11	17
	Male.....	22	3	5	1	.....	2	1	3	3	5	3	3	2	3	3	5	6	10
	Female.....	16	2	.....	1	.....	1	1	1	4	2	2	2	6	6	5	6	5	7
Floyd.....	Total.....	75	11	3	9	2	11	7	18	20	14	14	21	14	21	20	25	23	35
	Male.....	45	7	1	5	2	7	3	9	10	9	9	11	9	10	15	16	10	23
	Female.....	30	4	2	4	.....	4	4	9	10	7	5	12	5	10	11	9	13	12
Fountain.....	Total.....	46	9	3	2	2	5	4	9	9	7	7	5	6	12	11	15	23	22
	Male.....	24	8	1	.....	.....	.....	.....	5	5	3	3	2	4	6	6	6	12	13
	Female.....	22	1	2	2	2	5	4	4	4	4	4	3	2	6	5	9	11	9
Franklin.....	Total.....	37	2	4	2	3	5	2	4	6	11	7	8	5	9	11	13	7	17
	Male.....	17	2	2	1	.....	2	2	2	2	2	2	2	4	4	6	5	1	8
	Female.....	20	.....	2	1	3	3	.....	2	4	9	5	6	1	5	5	8	6	9
Fulton.....	Total.....	39	5	2	2	1	1	3	2	9	5	8	8	4	8	11	14	16	15
	Male.....	23	4	1	2	1	.....	2	2	3	3	2	2	1	1	6	9	10	5
	Female.....	16	1	1	.....	.....	1	1	2	6	2	7	6	3	7	5	5	6	10
Gibson.....	Total.....	110	18	6	3	5	15	7	19	15	7	13	10	19	11	18	20	14	20
	Male.....	66	10	2	3	4	11	3	9	7	4	8	7	9	7	8	14	6	10
	Female.....	44	8	4	.....	1	4	4	10	8	3	5	4	10	4	10	12	8	10
Grant.....	Total.....	141	16	13	7	4	12	13	17	25	19	15	20	18	17	31	41	56	94
	Male.....	75	10	7	5	2	7	4	6	16	8	11	11	8	9	16	23	40	63
	Female.....	66	6	6	2	2	5	9	11	9	11	4	9	10	8	15	18	16	31
Greene.....	Total.....	126	29	7	3	2	13	7	16	23	26	10	14	9	18	17	20	13	23
	Male.....	60	11	4	1	.....	6	3	8	12	12	6	10	3	10	9	10	7	10
	Female.....	66	18	3	2	2	7	4	8	11	14	4	4	7	8	8	10	6	13
Hamilton.....	Total.....	61	7	4	2	3	7	4	12	11	14	9	12	13	9	16	14	19	26
	Male.....	36	5	1	1	1	5	3	5	8	7	3	5	6	5	13	9	11	19
	Female.....	25	2	3	1	2	2	4	7	3	7	6	7	7	4	3	5	8	7

Hancock.....	Total.....	49	13	4	2	3	5	6	8	9	13	15	9	2	8	10	17	16	17
	Male.....	23	5	2	1	3	3	4	6	8	9	13	15	9	2	8	10	16	17
Harrison.....	Total.....	33	7	2	1	3	3	4	6	8	9	13	15	9	2	8	10	16	17
	Female.....	16	7	2	1	3	3	4	6	8	9	13	15	9	2	8	10	16	17
Harrison.....	Total.....	45	4	1	1	1	1	7	2	8	13	11	16	9	2	8	10	16	17
	Female.....	15	1	1	1	1	1	5	2	6	12	11	16	9	2	8	10	16	17
Hendricks.....	Total.....	61	9	2	2	1	7	2	8	13	13	11	16	9	2	8	10	16	17
	Female.....	24	5	1	1	1	5	2	6	12	13	11	16	9	2	8	10	16	17
Henry.....	Total.....	80	9	6	3	3	2	5	8	13	11	11	16	9	2	8	10	16	17
	Female.....	34	3	3	2	2	4	5	8	13	11	11	16	9	2	8	10	16	17
Howard.....	Total.....	105	16	9	6	1	8	16	9	11	19	14	13	23	23	18	24	23	23
	Female.....	61	11	4	2	1	5	11	9	11	19	14	13	23	23	18	24	23	23
Huntington.....	Total.....	65	9	6	2	1	4	12	10	13	6	6	4	9	10	18	23	23	23
	Female.....	26	8	2	1	1	1	8	10	13	6	6	4	9	10	18	23	23	23
Jackson.....	Total.....	95	17	4	3	5	7	8	11	11	16	12	12	12	8	13	14	15	15
	Female.....	54	11	4	1	3	4	7	6	6	12	12	12	12	8	13	14	15	15
Jasper.....	Total.....	25	1	2	2	1	4	2	11	7	9	8	2	2	4	5	9	8	8
	Female.....	17	1	2	1	1	2	1	5	6	7	8	2	2	4	5	9	8	8
Jay.....	Total.....	73	8	6	1	3	11	12	10	17	6	6	6	9	6	8	12	18	23
	Female.....	31	7	2	1	1	5	6	6	9	6	6	6	9	6	8	12	18	23
Jefferson.....	Total.....	52	11	1	1	2	5	6	11	11	15	9	9	14	9	8	16	19	26
	Female.....	20	8	1	1	1	4	2	7	9	8	7	7	14	9	8	16	19	26
Jennings.....	Total.....	34	7	5	2	2	4	4	8	4	4	4	9	2	3	4	7	22	16
	Female.....	16	4	5	1	1	3	3	5	3	3	3	7	2	2	3	5	8	6
Johnson.....	Total.....	56	8	9	1	3	3	6	12	14	9	7	6	7	9	10	19	12	18
	Female.....	20	1	5	1	1	2	2	5	5	2	3	3	5	3	5	9	7	8

TABLE No. 3—Continued.

COUNTRIES.	Sex.	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Kax.	Total	162	27	14	4	5	23	8	16	20	34	18	23	31	28	24	25	23	25
	Male	93	15	7	4	4	17	5	7	13	8	9	9	13	12	11	15	10	12
	Female	69	12	7	...	1	6	3	9	7	26	9	13	8	11	13	10	13	13
Kocimako	Total	73	6	10	2	1	6	4	7	6	14	9	11	13	13	13	13	23	28
	Male	41	5	8	1	1	3	2	6	5	4	5	4	7	6	9	7	8	10
	Female	32	1	2	1	...	3	2	1	1	10	4	7	6	7	4	6	15	18
Lagrange	Total	41	9	3	1	1	2	...	3	1	4	2	5	7	4	8	10	15	18
	Male	24	6	2	...	1	2	...	2	1	2	2	1	2	2	4	4	8	8
	Female	17	3	1	1	...	...	...	1	...	2	...	4	5	2	4	6	7	10
Lake	Total	335	43	29	9	6	17	13	23	54	46	48	47	52	43	34	27	30	31
	Male	227	31	14	5	5	7	9	17	39	34	36	32	35	30	30	22	17	20
	Female	158	22	15	4	1	10	3	6	15	12	12	15	17	13	11	5	13	11
Laporte	Total	131	13	6	3	1	8	3	13	22	25	25	28	24	30	10	22	33	42
	Male	78	8	2	1	1	6	...	6	13	16	15	15	15	15	16	15	16	22
	Female	53	5	4	2	...	2	3	7	9	9	10	13	9	15	3	7	17	20
Lawrence	Total	103	16	7	4	1	10	6	18	22	17	22	13	16	11	15	20	14	24
	Male	51	7	4	4	...	6	2	6	11	4	8	9	9	6	5	13	7	10
	Female	52	7	3	...	1	4	4	12	11	13	14	4	7	6	10	7	7	14
Madison	Total	199	34	4	6	7	13	12	19	31	26	28	26	34	28	39	35	48	44
	Male	113	16	4	4	4	10	10	10	15	15	11	11	19	11	13	14	24	24
	Female	86	18	...	2	3	3	2	9	16	11	17	11	15	17	26	21	24	20
Marton	Total	675	88	46	32	14	69	47	128	152	160	184	204	177	209	230	206	242	258
	Male	383	48	23	13	6	36	30	59	79	77	101	118	99	122	133	121	148	140
	Female	292	40	23	14	8	34	17	69	73	83	83	86	78	87	97	85	94	118
Marshall	Total	70	9	2	...	...	3	8	5	5	4	7	7	5	4	14	17	25	25
	Male	41	2	2	...	...	2	6	2	...	2	1	4	4	3	10	6	15	14
	Female	29	7	...	...	...	1	2	3	5	2	6	3	1	1	4	11	10	11

Martin.....	Total.....	51	4	1	1	1	2	6	4	3	2	11	4	7	4	2	6	12	9
	Male.....	31	1	1	1	2	1	5	3	2	3	7	3	3	2	2	5	1	5
	Female.....	20	3	1	1	1	1	1	1	1	1	4	1	1	2	4	1	7	4
Miami.....	Total.....	64	8	5	2	1	4	6	6	10	12	10	21	8	9	15	22	21	26
	Male.....	27	3	2	2	1	2	4	4	4	5	7	14	6	3	9	11	10	17
	Female.....	37	5	3	1	1	2	2	2	6	7	3	7	2	6	6	11	11	9
Monroe.....	Total.....	66	20	5	4	3	7	7	3	2	10	13	18	13	9	10	13	10	14
	Male.....	36	10	1	2	3	3	3	2	2	9	6	6	8	2	7	4	10	14
	Female.....	31	10	4	2	1	4	4	1	3	7	7	10	5	7	9	6	4	7
Montgomery.....	Total.....	66	9	5	2	2	4	4	3	8	13	18	13	11	15	11	14	28	20
	Male.....	39	2	1	1	1	3	1	1	3	7	9	9	9	7	4	8	22	12
	Female.....	27	7	4	1	1	1	1	2	5	6	9	4	2	8	7	6	8	18
Morgan.....	Total.....	68	9	6	3	3	11	6	6	11	19	7	14	8	11	9	13	17	18
	Male.....	37	4	3	2	2	6	3	5	5	13	1	7	6	3	5	7	8	5
	Female.....	31	5	3	1	1	5	3	6	6	6	6	7	2	8	4	6	9	13
Newton.....	Total.....	24	2	2	1	1	5	2	3	2	6	3	3	3	2	2	5	3	10
	Male.....	12	1	1	1	1	2	2	2	2	4	1	1	1	1	1	1	1	6
	Female.....	12	1	1	1	1	3	3	1	2	2	2	2	2	1	1	2	2	4
Noble.....	Total.....	77	10	3	4	4	1	5	9	5	5	9	5	7	10	5	9	14	21
	Male.....	47	5	1	3	1	2	3	4	2	2	5	3	4	3	4	7	12	12
	Female.....	30	5	2	1	1	1	2	5	3	3	4	4	6	4	3	6	10	9
Ohio.....	Total.....	10	2	2	2	2	2	2	2	2	2	4	4	5	4	3	1	3	5
	Male.....	5	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	3
	Female.....	5	1	1	1	1	1	1	1	1	1	2	2	3	2	2	1	2	2
Orange.....	Total.....	46	7	4	6	3	3	7	12	13	13	9	6	6	10	7	17	12	16
	Male.....	24	4	1	5	1	3	3	4	6	6	4	4	3	2	6	7	6	8
	Female.....	22	3	3	1	2	2	4	7	7	7	5	2	3	8	5	11	6	8
Owen.....	Total.....	22	8	5	3	1	5	2	2	2	6	2	3	3	6	1	7	10	21
	Male.....	19	3	4	1	1	3	2	1	1	3	2	2	2	3	1	6	5	13
	Female.....	3	6	1	2	1	2	2	2	1	3	2	1	1	3	1	1	5	8
Parks.....	Total.....	72	8	3	3	2	4	3	9	9	9	9	11	10	4	6	10	8	26
	Male.....	46	3	2	1	1	2	2	5	4	4	2	5	3	3	3	6	10	19
	Female.....	23	5	1	2	1	2	1	4	5	5	7	6	8	2	3	4	3	13
Perry.....	Total.....	54	7	4	2	1	4	4	4	4	17	6	10	3	1	5	7	8	9
	Male.....	27	3	1	1	1	3	2	2	1	7	2	4	1	1	4	4	5	3
	Female.....	27	4	3	1	1	1	2	2	2	10	4	6	2	3	1	3	3	6

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Pike.....	Total.....	72	13	11	3	2	8	3	13	9	9	8	15	4	11	10	13	14	23
	Male.....	32	6	5	1	1	5	2	8	4	5	3	5	3	3	7	7	8	9
	Female.....	40	7	6	2	1	3	1	5	5	4	5	10	1	8	3	6	6	14
Porter.....	Total.....	49	4	3	3	.....	1	3	2	5	5	8	6	7	10	8	16	15	17
	Male.....	23	2	.....	.....	.....	.....	2	1	3	3	3	2	4	7	6	9	6	9
	Female.....	26	2	3	3	.....	1	1	1	2	2	5	4	3	3	2	7	9	8
Posey.....	Total.....	80	12	9	3	3	6	11	9	10	13	6	13	11	7	10	16	13	15
	Male.....	51	5	6	1	3	3	6	2	7	5	3	9	5	3	4	8	8	6
	Female.....	29	7	3	2	.....	3	5	7	9	8	3	4	6	4	6	8	5	9
Pulaski.....	Total.....	35	0	3	.....	2	5	2	4	8	4	2	8	1	.....	6	5	6	7
	Male.....	24	4	.....	.....	1	3	2	3	1	1	1	1	.....	.....	4	2	4	4
	Female.....	11	2	3	.....	1	2	.....	2	7	3	1	4	1	.....	2	3	2	3
Putnam.....	Total.....	59	9	1	1	1	3	8	12	12	5	9	5	9	11	19	16	18	22
	Male.....	36	5	.....	.....	.....	2	5	8	10	2	4	1	4	2	9	8	9	10
	Female.....	23	4	1	1	1	1	3	4	2	3	5	4	5	9	10	8	9	12
Randolph.....	Total.....	72	9	5	1	4	7	5	10	11	10	13	12	7	17	12	18	17	27
	Male.....	40	5	2	.....	.....	4	7	7	3	2	6	7	1	6	6	4	4	16
	Female.....	32	4	3	1	4	3	3	3	8	8	7	5	6	11	6	14	10	11
Ripley.....	Total.....	41	9	3	2	.....	5	3	7	12	4	11	7	5	10	8	8	10	17
	Male.....	25	2	2	.....	.....	3	2	4	6	2	6	3	2	.....	4	4	3	9
	Female.....	16	7	1	.....	.....	2	1	3	6	2	5	4	3	7	2	4	7	8
Rush.....	Total.....	43	9	5	3	1	3	6	9	5	6	10	12	13	6	13	13	11	19
	Male.....	26	7	3	1	1	1	2	6	3	1	2	8	4	2	6	5	3	8
	Female.....	16	2	2	.....	.....	1	4	3	3	5	8	4	9	4	6	8	8	11
Scott.....	Total.....	23	2	.....	1	.....	2	2	5	.....	4	3	1	4	6	6	5	2	12
	Male.....	13	1	.....	.....	.....	1	.....	3	.....	1	1	.....	1	.....	3	3	2	3
	Female.....	10	1	.....	1	.....	1	1	2	.....	3	2	1	3	5	3	2	2	9

shelby.....	63	7	2	3	3	6	3	13	13	14	5	11	13	19	15	21	14	24
Male.....	30	6	1	2	2	2	2	9	3	5	2	5	4	7	11	13	5	9
Female.....	33	2	1	1	1	4	1	4	10	9	3	6	9	12	4	8	9	16
Spencer.....	58	12	5	6	1	10	3	10	15	8	10	9	0	10	4	6	9	16
Male.....	31	5	4	3	1	4	1	5	6	2	4	3	2	3	2	2	6	7
Female.....	27	7	1	3	...	6	2	5	9	6	6	6	4	7	2	4	3	9
Starks.....	29	5	...	1	1	3	2	5	5	2	3	3	5	7	3	6	9	9
Male.....	19	3	...	1	...	...	...	...	3	2	2	2	2	3	2	5	7	3
Female.....	10	2	...	...	1	...	2	1	2	1	1	1	2	4	1	1	2	6
Stenben.....	31	12	7	...	...	4	2	3	10	5	3	2	5	5	11	4	12	20
Male.....	23	7	2	...	...	1	2	...	3	3	1	1	1	3	4	2	7	8
Female.....	9	5	5	...	1	3	2	...	7	2	2	1	4	2	7	2	5	12
St. Joseph.....	320	25	14	7	7	18	21	27	40	29	38	32	33	43	46	49	43	59
Male.....	197	14	9	2	3	13	10	18	18	13	19	16	16	27	25	25	25	29
Female.....	123	11	5	5	4	5	8	17	22	16	19	16	15	16	27	24	18	30
Sullivan.....	117	18	10	2	4	8	6	12	16	21	22	16	14	11	13	16	21	20
Male.....	71	4	6	1	2	4	3	6	8	9	9	7	5	7	6	9	12	9
Female.....	46	14	4	1	2	4	3	6	8	9	9	9	9	4	7	7	9	11
Switzerland.....	32	3	1	4	1	6	6	5	4	3	6	7	3	5	6	8	13	17
Male.....	19	2	1	4	1	3	2	3	1	3	5	2	3	3	2	3	9	6
Female.....	13	1	...	...	...	3	4	2	3	...	1	5	...	2	4	5	4	11
Tippecanoe.....	90	13	5	4	5	10	7	12	25	18	24	26	29	27	31	31	42	61
Male.....	45	6	3	2	1	5	2	4	15	13	12	13	18	15	19	10	21	33
Female.....	45	7	2	2	4	5	5	8	10	5	12	13	11	12	12	12	21	28
Tipton.....	51	6	4	2	3	4	3	9	8	10	9	6	4	7	9	11	6	12
Male.....	30	3	3	...	...	...	...	...	3	5	6	5	3	5	3	4	2	4
Female.....	21	3	1	2	2	4	3	3	5	5	3	1	1	2	6	7	2	8
Union.....	18	2	...	...	...	...	...	...	4	2	1	...	...	2	4	2	3	7
Male.....	9	...	...	...	...	...	...	...	1	1	...	...	...	2	3	2	4	4
Female.....	4	1	...	...	...	...	...	...	3	1	...	1	2	...	1	1	...	3
Vanderburgh.....	247	33	22	12	14	25	29	38	57	59	49	48	64	71	54	59	82	61
Male.....	120	16	14	7	5	11	17	20	31	31	26	27	37	44	37	39	40	32
Female.....	127	16	8	5	9	14	12	18	26	33	23	21	27	27	17	20	37	28
Vermillion.....	97	12	3	5	1	2	4	11	7	12	6	10	9	5	5	11	11	13
Male.....	59	8	2	1	1	2	...	...	4	6	2	2	2	3	3	6	8	10
Female.....	38	4	1	4	...	...	4	...	3	6	4	8	6	2	2	5	3	3

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Vigo.....	Total.....	257	28	29	12	9	25	14	27	61	54	44	57	55	43	66	66	60	86
	Male.....	148	13	17	4	3	10	9	18	24	30	24	34	34	27	43	36	34	46
	Female.....	109	15	12	8	6	15	5	9	37	24	20	23	21	16	24	30	26	40
Wabash.....	Total.....	68	6	4	.....	1	5	5	8	15	8	7	10	5	11	17	18	17	22
	Male.....	40	4	3	.....	1	2	3	3	8	1	3	6	3	5	14	8	12	14
	Female.....	18	2	1	.....	.....	3	2	5	7	7	4	4	2	6	3	10	5	.....
Warren.....	Total.....	28	10	1	1	.....	3	2	1	1	3	2	3	6	3	5	4	9	8
	Male.....	13	6	.....	1	.....	3	2	.....	.....	2	2	2	5	3	2	2	6	4
	Female.....	15	4	1	.....	.....	.....	.....	.....	1	1	.....	.....	1	.....	3	2	3	4
Warrick.....	Total.....	67	13	7	5	1	8	1	16	7	13	9	13	7	5	5	11	17	27
	Male.....	39	9	4	2	.....	3	.....	2	5	5	5	5	2	2	4	7	6	8
	Female.....	28	4	3	3	1	5	1	14	2	8	4	8	5	3	1	4	11	9
Washington.....	Total.....	53	5	6	1	1	6	3	9	11	11	8	13	3	7	8	15	18	28
	Male.....	35	2	4	.....	1	3	1	4	4	5	4	4	.....	4	4	7	10	14
	Female.....	18	3	2	1	.....	3	2	5	7	6	4	9	3	3	4	9	8	9
Wayne.....	Total.....	87	13	9	3	4	11	5	5	20	22	10	26	25	38	33	26	39	47
	Male.....	55	10	6	.....	2	4	2	10	12	12	6	14	16	15	19	14	17	21
	Female.....	32	3	3	3	2	7	3	4	10	10	4	12	9	23	13	12	22	26
Wells.....	Total.....	47	10	4	1	.....	6	2	2	6	3	5	7	8	11	11	9	13	10
	Male.....	26	4	2	1	.....	3	1	1	4	2	2	3	5	7	6	5	8	6
	Female.....	21	6	2	.....	.....	3	1	1	2	1	3	4	3	4	5	4	5	4
White.....	Total.....	42	2	3	1	.....	4	3	7	6	5	7	5	5	7	5	6	8	19
	Male.....	34	1	2	.....	.....	3	1	5	3	4	1	1	2	2	4	2	10	10
	Female.....	8	1	1	1	.....	1	2	2	3	1	6	4	3	5	1	4	2	9

Whiskey.....	40	1	2	1	1	1	3	3	6	9	5	4	4	9	10	4	11
Male.....	23	1	1	1	1	1	2	2	3	4	3	2	2	6	5	2	7
Female.....	18	.....	1	.....	.....	.....	.....	.....	3	5	3	2	2	3	5	2	4
Total males.....	4,367	597	285	159	91	351	298	459	633	614	633	640	644	719	880	970	1,283
Total females.....	3,317	535	267	153	105	323	287	539	723	704	623	63	552	661	703	792	1,167
Grand total.....	7,714	1,132	552	292	196	673	585	1,018	1,406	1,318	1,256	1,273	1,226	1,410	1,583	1,763	2,450

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1908.

COUNTIES.	Sex.	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Adams.....	Total.....	20	10	12	3	.....	214	1	191	21	3	109	71	35	.....	315
	Male.....	8	7	9	2	.....	116	1	105	11	1	61	40	16	.....	117
Allen.....	Female.....	12	3	3	1	.....	98	.....	86	10	2	48	31	19	.....	98
	Total.....	35	73	101	15	.....	1,162	12	901	256	17	510	406	253	6	1,174
Bartholomew.....	Male.....	53	38	45	6	.....	586	5	445	135	11	233	225	80	4	591
	Female.....	33	35	56	9	.....	576	7	456	121	6	238	181	172	2	583
Bartolomew.....	Total.....	19	24	23	7	.....	313	7	290	25	5	127	131	59	3	320
	Male.....	13	13	10	2	.....	159	4	146	15	2	71	72	19	1	163
Benton.....	Female.....	7	11	13	5	.....	154	3	144	10	3	56	59	40	2	187
	Total.....	12	8	7	2	.....	116	.....	104	11	1	59	36	20	1	116
Blackford.....	Male.....	7	2	2	1	.....	63	.....	61	2	.....	35	20	8	.....	63
	Female.....	5	5	5	1	.....	53	.....	43	9	1	24	16	12	1	53
Blackford.....	Total.....	20	13	8	1	1	179	.....	163	8	8	80	59	38	2	179
	Male.....	11	7	6	.....	1	102	.....	91	5	6	46	39	15	2	102
Boone.....	Female.....	9	6	2	1	.....	77	.....	72	3	2	34	20	23	.....	77
	Total.....	34	39	37	5	.....	339	2	331	5	5	112	159	69	1	341
Boone.....	Male.....	17	23	18	2	.....	174	1	169	3	3	96	83	25	1	175
	Female.....	17	16	19	3	.....	165	1	162	2	2	46	76	44	.....	166
Brown.....	Total.....	6	5	9	2	.....	85	.....	81	1	3	34	39	12	.....	85
	Male.....	4	4	1	2	.....	41	.....	41	1	1	23	17	5	.....	44
Brown.....	Female.....	2	4	4	.....	.....	41	.....	40	.....	.....	12	22	7	.....	41
	Total.....	23	18	25	2	.....	262	.....	243	12	7	95	108	58	1	263
Carroll.....	Male.....	11	9	11	1	.....	140	.....	128	6	6	64	64	22	.....	140
	Female.....	12	9	14	1	.....	123	.....	115	6	1	41	44	36	1	123

Cass.....	Total.....	50	48	44	7	5	593	4	486	78	35	208	239	129	21	597
	Male.....	26	24	17	3	2	313	1	243	45	16	115	134	43	12	304
	Female.....	24	24	27	4	3	280	3	243	31	19	93	105	86	9	293
Clark.....	Total.....	32	29	48	4	2	407	65	407	54	11	190	171	106	5	472
	Male.....	16	20	21	1	1	227	30	214	36	8	110	100	42	5	287
	Female.....	16	9	27	3	1	180	35	193	19	3	80	71	64	...	215
Clay.....	Total.....	25	22	29	4	6	437	6	377	50	18	200	192	74	7	443
	Male.....	8	11	11	2	5	220	2	183	27	12	111	83	23	5	222
	Female.....	17	11	18	2	1	217	4	194	23	4	89	79	51	2	221
Clinton.....	Total.....	29	28	31	2	2	406	3	396	8	5	166	155	85	3	409
	Male.....	13	14	16	...	2	211	1	205	5	2	96	84	29	3	212
	Female.....	16	14	15	2	...	185	2	191	3	3	70	71	56	...	197
Crawford.....	Total.....	12	5	14	4	3	161	...	152	1	8	65	63	33	...	161
	Male.....	5	2	6	2	3	85	...	79	1	5	37	36	12	...	85
	Female.....	7	3	8	2	...	76	...	73	...	3	28	27	21	...	76
Davies.....	Total.....	26	20	27	1	...	341	6	329	15	3	180	125	61	1	347
	Male.....	14	9	20	...	...	192	4	185	10	1	95	76	25	...	196
	Female.....	12	11	7	1	...	149	2	144	5	2	65	49	36	1	151
Dearborn.....	Total.....	26	31	36	4	2	292	4	217	69	10	95	112	85	4	296
	Male.....	18	15	12	2	2	155	3	115	35	8	58	66	20	4	158
	Female.....	8	16	24	2	...	137	1	102	34	2	37	46	55	...	138
Deatur.....	Total.....	23	21	33	6	1	269	2	247	14	10	104	100	64	3	271
	Male.....	9	9	15	3	1	136	...	123	5	8	57	55	21	3	136
	Female.....	14	12	18	3	...	133	2	124	9	2	47	45	43	...	135
Detailb.....	Total.....	30	25	30	5	...	316	1	289	24	4	105	129	78	4	317
	Male.....	18	15	14	4	...	166	...	140	15	2	60	71	33	2	166
	Female.....	12	10	16	1	...	150	1	140	9	2	46	58	45	2	151
Delaware.....	Total.....	44	33	42	6	...	635	38	602	21	10	330	237	134	2	693
	Male.....	27	12	23	5	...	342	22	345	13	6	176	121	65	2	364
	Female.....	17	21	19	1	...	293	16	257	8	4	154	116	69	...	329
Dubois.....	Total.....	12	8	16	3	...	212	...	181	31	...	101	72	39	...	212
	Male.....	10	5	8	1	...	105	...	87	18	...	46	27	20	...	105
	Female.....	2	3	8	2	...	107	...	94	13	...	53	35	19	...	107
Elkhart.....	Total.....	49	50	50	11	1	663	2	599	50	16	256	264	142	3	665
	Male.....	25	30	31	3	1	345	...	302	31	13	145	139	59	3	346
	Female.....	24	20	19	8	...	317	2	297	19	3	111	125	83	...	319

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75		75 to 80		80 to 90		90 and over.	Unknown.	White.		Colored.	American.	Foreign.	Not Reported.		Single.	Married.	Widowed.	Not Reported.	Total.
		70	75	75	80	80	90			White.	Colored.				Not	Reported.					
Fayette	Total	15	15	20	1	1	1	1	1	182	9	183	14	4	81	40	201				
	Male	6	6	14	1	1	1	1	1	101	3	100	7	3	49	15	107				
Floyd	Total	46	31	46	8	2	2	2	2	438	53	399	83	9	188	172	491				
	Male	25	14	20	1	1	1	1	1	228	23	212	45	4	111	107	381				
Fountain	Total	15	15	28	3	3	3	3	3	258		240	13	5	102	113	258				
	Male	10	9	13	1	1	1	1	1	140		130	6	4	53	71	140				
Franklin	Total	13	21	27	4	4	4	4	4	218		174	42	2	87	77	218				
	Male	5	9	13	2	2	2	2	2	104		75	27	2	41	40	104				
Fulton	Total	22	16	12	1	1	1	1	1	201		183	7	1	68	88	201				
	Male	10	9	9	1	1	1	1	1	105		99	5	1	40	46	105				
Gibson	Total	28	24	30	4	4	4	4	4	396	26	383	29	10	210	129	422				
	Male	13	14	13	3	3	3	3	3	220	10	211	16	3	129	77	230				
Grant	Total	84	57	51	12	12	12	12	12	728	37	710	34	19	288	255	783				
	Male	62	38	29	4	4	4	4	4	432	22	415	23	16	176	152	454				
Greene	Total	25	23	26	2	2	2	2	2	461	2	424	24	5	243	133	453				
	Male	13	8	18	1	1	1	1	1	220	2	199	19	4	120	76	222				
Hamilton	Total	17	20	47	4	4	4	4	4	332	8	330	5	5	127	90	340				
	Male	7	21	30	1	1	1	1	1	190	6	189	4	3	70	83	196				
	Female	10	9	17	3	3	3	3	3	142	2	141	1	2	57	44	144				

Hancock	Total	24	23	22	2	279	3	272	8	2	120	103	58	1	262
	Male	15	9	12	2	127	3	128	6	2	50	45	23	1	162
	Female	9	13	10	2				2				35		130
Harrison	Total	22	26	20	2	237		208	24	5	94	82	57	4	237
	Male	12	11	8	2	121		110	8	3	54	40	26	1	121
	Female	10	15	12	1	116		98	16	2	40	42	31	3	116
Headricks	Total	29	24	40	4	287	7	280	8	6	119	105	69	1	294
	Male	14	13	25	2	140	2	145	4	2	63	90	27	1	151
	Female	15	11	15	2	138	5	135	4	4	56	45	42		143
Henry	Total	32	25	36	5	363	7	358	6	6	137	142	81	10	370
	Male	18	12	19	3	183	5	181	2	5	74	77	32	5	188
	Female	14	13	17	2	180	2	177	4	1	63	65	49	5	182
Howard	Total	29	30	29	4	435	14	424	20	5	200	171	77	1	449
	Male	18	16	12	1	230	7	232	11	3	120	94	31	1	246
	Female	11	14	17	3	196	7	192	9	2	80	77	46		203
Hurlington	Total	29	27	41	6	364	1	331	28	6	127	143	88	7	365
	Male	12	16	19	2	193		175	14	4	72	81	34	6	193
	Female	17	9	22	4	171	1	156	14	2	55	62	54	1	172
Jackson	Total	26	15	28	2	369	3	344	25	3	175	130	63	4	372
	Male	12	7	15	1	185	3	174	14		94	67	25	2	188
	Female	14	8	13	1	184		170	11	3	81	63	38	2	184
Jasper	Total	18	6	11	4	158		137	19	2	61	68	29		158
	Male	8	4	7	2	88		73	14	1	36	41	11		88
	Female	10	2	4	2	70		64	5	1	25	27	18		70
Jay	Total	29	17	28	2	320	6	312	10	4	139	124	61	2	326
	Male	19	13	14	2	176	2	168	7	3	76	71	32	2	178
	Female	10	4	14	2	144	4	144	3	1	63	53	29		148
Jafferson	Total	35	30	46	8	350	16	308	50	8	119	144	98	5	366
	Male	18	17	23	3	181	12	168	19	6	72	90	28	3	193
	Female	17	13	23	5	169	4	140	31	2	47	54	70	2	173
Jennings	Total	25	20	18	4	200	5	184	18	3	73	76	52	4	205
	Male	13	13	8	1	98	5	92	8	3	38	43	20	2	103
	Female	12	7	10	3	102		92	10		35	33	32	2	102
Johnson	Total	28	19	21	2	272	5	264	7	6	127	96	54		277
	Male	6	9	9	1	116		115	4	4	58	49	13		120
	Female	20	10	12	1	157		149	3	6	69	47	41		157

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Knox.....	Total.....	46	30	29	1	2	594	8	546	45	11	307	190	100	5	602
	Male.....	25	16	13	1	2	298	5	276	24	5	173	93	34	3	303
	Female.....	21	14	16	1	1	296	3	270	21	6	134	97	66	2	299
Kosciusko.....	Total.....	36	25	43	5	1	361	1	343	12	6	128	149	81	3	361
	Male.....	22	13	27	1	1	199	1	179	7	3	76	94	28	1	189
	Female.....	14	12	16	4	1	172	1	164	5	3	52	65	53	2	172
Lagrange.....	Total.....	23	15	23	2	1	197	1	185	10	2	69	81	46	1	197
	Male.....	13	7	12	1	1	102	1	94	7	1	42	41	18	1	102
	Female.....	10	8	11	1	1	95	1	91	3	1	27	40	28	1	95
Lake.....	Total.....	37	25	33	5	8	1,036	8	659	305	50	636	283	96	39	1,044
	Male.....	16	13	18	2	7	644	5	406	199	44	399	173	39	38	649
	Female.....	21	12	15	3	1	392	3	253	106	6	237	110	57	1	395
Laporte.....	Total.....	46	44	51	10	3	537	15	407	175	20	239	207	137	19	602
	Male.....	23	23	27	3	2	327	11	218	104	16	150	118	58	12	338
	Female.....	23	21	24	7	1	260	4	189	71	4	89	89	79	7	264
Lawrence.....	Total.....	22	28	17	3	1	417	3	403	10	7	189	144	87	26	420
	Male.....	11	15	6	1	1	195	2	188	7	2	104	87	26	26	197
	Female.....	11	23	11	2	1	222	1	215	3	5	85	57	61	1	223
Madison.....	Total.....	48	31	42	7	4	747	17	718	30	16	350	277	136	1	764
	Male.....	28	15	25	2	2	396	9	380	19	8	210	148	46	1	405
	Female.....	20	16	17	4	1	351	8	338	11	10	140	129	90	1	359
Marion.....	Total.....	216	205	184	19	4	3,184	555	3,218	465	56	1,523	1,363	820	33	3,729
	Male.....	122	101	85	8	2	1,777	292	1,758	270	31	901	809	377	22	2,052
	Female.....	94	104	99	11	1	1,407	273	1,460	195	25	622	554	443	11	1,680
Marshall.....	Total.....	34	20	31	1	1	294	2	259	25	12	115	116	62	3	276
	Male.....	14	10	17	1	1	151	2	131	14	8	61	73	18	1	153
	Female.....	20	10	14	1	1	143	1	128	11	4	54	43	44	2	147

Martin.....	Total.....	11	9	7	.....	173	.....	169	3	1	85	62	26	.....	173
	Male.....	6	1	4	.....	85	.....	82	2	1	33	26	7	.....	85
	Female.....	5	8	3	.....	88	.....	87	1	.....	.....	36	19	.....	88
Miami.....	Total.....	27	31	37	9	365	2	326	26	15	127	147	90	3	367
	Male.....	18	16	16	.....	187	2	167	16	6	67	89	32	2	189
	Female.....	9	15	2	3	178	.....	159	10	9	60	58	58	1	178
Monroe.....	Total.....	21	21	24	5	208	10	305	8	5	130	125	57	6	318
	Male.....	14	11	13	2	161	4	156	5	4	68	70	22	1	165
	Female.....	7	10	11	3	147	6	149	3	1	62	55	35	1	153
Montgomery.....	Total.....	40	33	37	4	377	3	366	10	4	122	163	19	7	390
	Male.....	26	21	14	1	197	3	191	5	4	70	90	37	3	200
	Female.....	14	12	23	3	180	.....	175	5	.....	52	72	52	4	180
Morgan.....	Total.....	20	23	25	4	318	1	311	5	3	140	117	60	2	319
	Male.....	13	13	8	1	162	.....	159	2	1	79	58	24	1	162
	Female.....	7	10	17	3	156	1	152	3	2	61	59	36	1	157
Newton.....	Total.....	5	9	12	1	98	1	91	7	1	38	36	24	1	99
	Male.....	3	4	3	1	44	.....	41	3	.....	17	19	7	1	44
	Female.....	2	5	9	.....	54	1	50	4	1	21	17	17	.....	55
Noble.....	Total.....	27	18	41	3	319	1	283	33	4	129	124	65	2	320
	Male.....	20	9	26	3	186	.....	165	19	2	74	70	31	2	186
	Female.....	7	9	15	.....	133	1	118	14	2	55	45	34	.....	134
Ohio.....	Total.....	3	5	8	2	63	5	60	6	2	30	23	14	1	68
	Male.....	1	.....	2	1	28	3	27	2	2	14	14	2	1	31
	Female.....	2	5	6	1	35	2	33	4	.....	16	9	12	.....	37
Orange.....	Total.....	11	10	11	4	224	2	216	5	5	108	83	33	2	226
	Male.....	8	7	6	2	111	1	105	3	4	56	36	18	2	112
	Female.....	3	3	5	2	113	1	111	2	1	52	47	15	.....	114
Cwen.....	Total.....	17	10	18	2	156	3	153	4	2	63	65	31	.....	159
	Male.....	13	5	10	2	87	3	86	3	1	44	31	15	.....	90
	Female.....	4	5	8	.....	69	.....	67	1	1	19	34	16	.....	69
Parks.....	Total.....	13	27	30	5	286	6	266	17	9	119	106	65	2	292
	Male.....	8	11	16	2	132	.....	140	7	5	78	48	28	2	152
	Female.....	5	16	15	3	134	6	126	10	4	43	58	39	.....	140
Perry.....	Total.....	19	15	17	6	203	8	164	44	3	101	69	41	.....	211
	Male.....	8	10	10	5	98	5	75	25	3	49	36	15	.....	103
	Female.....	11	5	7	1	105	3	89	19	.....	52	30	26	.....	108

TABLE No. 3—Continued.

COUNTIES.	Sex.		73 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Rep.	Single.	Married.	Widow.	Not Rep.	Total.
Pike.....	Total.....		11	18	15	3	1	296	3	274	9	6	126	106	46	1	299
	Male.....		10	10	7	1	1	137	2	129	6	4	65	55	18	1	139
	Female.....		1	8	8	2	1	149	1	145	3	2	71	51	28		150
Porter.....	Total.....		23	29	27	4	3	246	2	188	69	11	78	101	60	9	248
	Male.....		14	15	15	3	3	124	2	90	35	11	46	61	21	8	136
	Female.....		9	14	12	1		112		78	34		32	40	39	1	112
Posey.....	Total.....		16	18	11	3	2	283	41	284	18	2	152	93	55	4	304
	Male.....		5	8	5	1	2	135	21	137	8	1	83	39	22	2	156
	Female.....		11	10	6	2	1	128	20	137	10	1	59	54	33	2	148
Pulaski.....	Total.....		6	11	20	2		148		122	19	2	63	50	30		143
	Male.....		3	6	15			80		66	12	2	40	25	15		80
	Female.....		3	5	5	2		63		56	7		23	25	15		63
Putnam.....	Total.....		21	24	25	3		288	5	283	8	2	113	121	59		293
	Male.....		11	11	12	1		149	2	146	3		73	59	19		151
	Female.....		10	13	13	2		139	3	135	5	2	40	62	40		142
Randolph.....	Total.....		36	23	35		1	347	5	340	9	3	130	145	75	2	352
	Male.....		17	11	16		1	156	5	152	7	2	64	67	29	1	161
	Female.....		19	12	19			191		188	2	1	66	78	46	1	191
Ripley.....	Total.....		32	23	29	2		247	1	190	54	4	96	91	60	1	248
	Male.....		9	11	17	1		120	1	97	22	2	58	47	16		121
	Female.....		23	12	12	1		127		93	32	2	38	44	44	1	127
Rush.....	Total.....		16	23	25	4	3	247	8	246	7	2	94	97	63	1	255
	Male.....		7	10	12	2	3	118	4	119	2	1	55	48	19		122
	Female.....		9	13	13	2		129	4	127	5	1	39	49	44	1	133
Scott.....	Total.....		5	8	9	3		108		100	1	2	42	39	21	1	103
	Male.....		3	3	4	2		45		43	1	1	20	18	7		45
	Female.....		2	5	5	1		58		57			22	21	14	1	58

Shelby.....	Total.....	34	33	36	2	..	343	11	326	22	6	135	131	83	5	354
Male.....	Male.....	20	14	17	1	..	162	7	153	12	4	71	69	26	3	169
Female.....	Female.....	14	19	19	1	..	181	4	173	10	2	64	62	57	2	185
Spencer.....	Total.....	13	13	22	7	..	233	20	230	23	..	119	90	42	2	253
Male.....	Male.....	6	8	10	4	..	111	8	107	12	..	63	46	9	1	119
Female.....	Female.....	7	5	12	3	..	122	12	123	11	..	56	44	33	1	134
Stark.....	Total.....	13	7	7	..	..	124	1	100	23	2	54	46	25	..	125
Male.....	Male.....	6	4	7	..	..	77	1	59	18	1	36	30	12	..	78
Female.....	Female.....	7	3	..	..	..	47	..	41	5	1	18	16	13	..	47
Steen.....	Total.....	14	19	17	3	1	191	..	180	6	5	72	77	41	1	191
Male.....	Male.....	9	12	10	2	1	99	..	92	3	4	39	43	16	1	99
Female.....	Female.....	5	7	7	1	..	92	..	88	3	1	33	34	25	..	92
St. Joseph.....	Total.....	62	70	52	11	..	1,034	12	904	299	13	546	325	168	7	1,046
Male.....	Male.....	37	39	23	6	..	589	6	440	130	5	328	179	64	4	573
Female.....	Female.....	25	31	29	5	..	445	6	364	99	8	218	146	104	3	471
Sullivan.....	Total.....	23	16	19	4	1	409	1	399	20	10	207	144	50	9	410
Male.....	Male.....	9	9	7	2	1	213	..	194	14	5	122	72	13	6	213
Female.....	Female.....	14	7	12	2	..	196	1	186	6	5	85	72	37	3	197
Switzerland.....	Total.....	15	14	28	2	..	188	1	181	7	1	78	68	43	..	189
Male.....	Male.....	6	7	14	1	..	102	..	99	3	..	48	31	23	..	102
Female.....	Female.....	7	7	14	1	..	86	1	82	4	1	30	37	20	..	87
Tippecanoe.....	Total.....	74	66	53	10	3	656	10	534	114	18	237	238	182	9	666
Male.....	Male.....	38	36	27	3	3	350	3	294	54	15	143	131	72	7	353
Female.....	Female.....	36	30	26	7	..	306	7	240	60	3	94	107	110	2	313
Tipton.....	Total.....	14	18	16	..	1	213	..	200	7	6	97	75	41	..	213
Male.....	Male.....	7	10	10	..	1	117	..	110	4	3	56	40	21	..	117
Female.....	Female.....	7	8	6	..	..	96	..	90	3	3	41	35	20	..	96
Union.....	Total.....	6	11	10	3	1	72	3	69	5	1	23	30	20	2	75
Male.....	Male.....	5	5	5	1	1	42	1	39	3	1	15	17	9	2	43
Female.....	Female.....	1	6	5	2	..	30	2	30	2	..	8	13	11	..	32
Vanderburgh.....	Total.....	63	74	50	9	1	1,067	163	980	194	46	549	419	234	18	1,220
Male.....	Male.....	31	33	22	5	..	547	89	498	109	29	299	240	79	18	636
Female.....	Female.....	32	41	28	4	1	510	74	482	85	17	250	176	155	..	584
Vermillion.....	Total.....	19	14	16	4	1	271	7	268	18	2	151	85	40	2	278
Male.....	Male.....	11	11	9	3	1	164	1	142	12	1	91	43	20	2	155
Female.....	Female.....	8	3	7	1	..	117	6	116	6	1	60	43	20	..	123

TABLE No. 3—Continued.

COUNTIES.	Sex.		70 to 75	75 to 80	80 to 85	85 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Vigo.....	Total.....		70	57	68		8	2	1,127	71	1,045	117	26	532	404	242	20	1,198
	Male.....		37	35	32		5	1	621	43	570	71	22	311	244	94	14	663
	Female.....		33	22	36		3	1	506	29	475	46	14	221	160	148	6	535
Wabash.....	Total.....		22	30	34		5	3	308	3	291	15	5	108	130	71	2	311
	Male.....		16	19	13		1	1	176	2	170	8	2	73	77	28	2	180
	Female.....		6	11	21		4	2	130	1	121	7	3	35	53	43		131
Warren.....	Total.....		13	18	8		2		131		122	6	3	55	42	33	1	131
	Male.....		6	5	4		1		69		63	4	2	31	31	6	1	69
	Female.....		7	13	4		1		62		59	2	1	24	11	27		62
Warrick.....	Total.....		24	19	17		2		273	11	265	16	3	130	96	58		284
	Male.....		14	11	8		1		136	6	132	7	3	70	51	21		142
	Female.....		10	8	9		1		137	5	133	9		60	45	37		142
Washington.....	Total.....		14	22	25		4		267		262	2	3	113	93	61		267
	Male.....		7	14	9		1		142		139	1	2	71	51	20		142
	Female.....		7	8	16		3		125		123	1	1	42	42	41		125
Wayne.....	Total.....		52	44	63		7		552	36	536	46	6	212	237	134	5	588
	Male.....		32	22	27		3		290	18	281	25	2	128	129	47	4	308
	Female.....		20	22	36		4		262	18	255	21	4	84	108	87	1	280
Wells.....	Total.....		21	26	20		5		227		214	10	3	83	93	51		227
	Male.....		8	14	8		3		117		110	6	1	44	57	16		117
	Female.....		13	12	12		2		110		104	4	2	39	36	35		110
White.....	Total.....		13	18	28		3		195		176	16	3	77	77	29	2	195
	Male.....		6	9	15		1		103		92	9	2	40	34	13	1	103
	Female.....		7	9	11		3		92		84	7	1	37	43	16	1	92

Whitley.....	17	22	24	1	.....	188	.....	168	14	6	73	68	47	.....	188
Male.....	7	14	16	1	.....	100	.....	90	8	2	40	38	22	.....	100
Female.....	10	8	8	.....	.....	88	.....	78	6	4	33	30	25	.....	88
Total males.....	1,440	1,276	1,380	176	65	18,442	752	16,702	2,030	462	8,794	7,304	2,628	268	19,184
Total females.....	1,210	1,159	1,386	216	22	16,362	668	15,208	1,545	277	6,491	5,832	4,603	104	17,030
Grand total.....	2,650	2,435	2,776	392	87	34,804	1,420	31,910	3,575	739	15,285	13,136	7,431	372	36,224

TABLE No. 4.

Deaths in Indiana by Counties for the Year 1908.

STATE AND COUNTIES.	Population, Estimated 3 times School Census, 1908.	Total Deaths Reported for Year 1908.	Annual Death Rate Per 1,000 Population.	Stillbirths.	IMPORTANT AGES.					DEATHS FROM IMPORTANT CAUSES.																
					Under 1 Year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pneumonia.	Diarrheal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puertal Dephemia.	Cancer.	Violence.	Smallpox.								
State of Indiana.	2,730,144	36,224	13.2	2,029	7,714	2,172	673	585	1,018	10,703	3,825	702	885	287	18	95	209	416	2,517	1,635	154	887	163	1,739	2,527	15
Northern Counties.	920,585	11,747	12.7	687	2,678	626	191	205	273	3,636	975	187	243	67	5	51	43	134	828	561	59	232	40	613	923	2
Adams.....	25,452	215	8.4	17	62	14	5	4	7	59	29	8	4	2	2	2	3	9	6	6	2	2	2	16	12	
Allen.....	89,576	1,174	13.1	65	243	55	21	23	31	344	91	24	17	8	5	3	15	3	89	51	4	18	5	60	104	
Benton.....	12,320	116	9.4	8	32	11	2	1	2	34	8	...	...	2	...	...	...	10	3	1	4	1	6	3		
Blackford.....	15,222	179	11.0	16	50	13	1	...	...	52	23	3	...	...	1	1	3	2	10	5	2	5	2	18	24	1
Carroll.....	18,868	262	13.8	17	50	8	3	9	10	86	29	6	5	1	...	...	...	...	20	5	2	5	2	18	24	1
Cass.....	35,231	597	16.9	21	87	22	10	7	12	188	58	9	13	...	3	1	8	3	47	14	5	14	3	29	53	
Delab.....	24,503	317	12.9	13	61	13	4	6	4	115	21	8	7	...	...	...	...	1	8	8	1	5	...	19	23	
Elkhart.....	47,667	665	13.9	32	129	38	10	16	10	213	44	9	9	5	3	1	7	44	36	3	14	2	43	51		
Fulton.....	17,689	201	11.3	14	39	10	1	3	2	66	25	4	2	...	1	1	1	7	7	10	13	6	3	6		
Grant.....	57,239	763	13.3	37	141	40	12	13	17	298	83	9	7	4	1	2	15	64	18	4	12	2	32	4		
Howard.....	29,837	449	15.0	35	105	32	8	16	9	115	57	6	15	1	1	1	6	41	10	5	11	3	20	34		
Huntington.....	30,607	365	11.9	25	65	19	4	12	10	129	24	7	8	5	...	...	...	1	29	12	1	16	...	20	22	
Jasper.....	14,469	158	10.9	5	25	6	2	2	11	52	22	2	2	...	2	1	10	5	11	12	3	...	11	12	...	
Jay.....	27,156	326	12.0	15	73	18	11	12	10	97	34	5	4	1	1	1	7	28	13	2	9	1	20	23		
Kosciusko.....	28,199	361	12.8	24	73	19	6	4	7	137	33	3	10	...	2	7	4	16	10	2	3	1	18	22		
Lagrange.....	15,449	197	12.7	8	41	14	2	...	3	81	13	3	2	...	2	2	3	12	5	...	9	2	12	7		
Lake.....	63,444	1,044	16.4	69	355	87	17	12	23	131	71	16	59	10	3	9	4	7	111	151	3	9	4	33	137	
Laporte.....	56,007	602	10.7	39	131	23	8	3	13	193	43	8	16	2	...	1	...	2	30	34	4	1	...	37	69	
Marshall.....	25,067	276	11.8	24	70	11	...	...	5	111	16	2	...	...	...	...	...	3	15	10	...	14	...	19	20	

Miami	29,543	367	9.0	14	64	16	4	6	10	120	33	8	8	3	9	27	9	3	9	1	3	22	29
Newton	10,612	99	9.2	4	24	9	5	5	2	37	8	4	7	2	1	11	2	1	2	1	8	22	
Noble	22,627	320	14.1	29	77	17	1	5	2	110	10	4	7	2	1	4	19	6	5	5	3	20	
Porter	20,965	246	11.8	11	49	10	1	3	2	100	12	1	3	1	3	25	12	5	5	1	12	21	
Pulaski	15,928	143	8.9	10	35	11	5	2	4	46	12	1	3	2	2	10	6	3	5	4	8	8	
Starke	12,404	125	10.0	7	29	29	3	2	5	36	7	3	2	1	1	9	10	1	3	2	9	16	
Steuben	13,359	191	14.2	8	31	20	4	2	3	73	12	3	2	1	1	10	5	2	3	2	9	8	
St. Joseph	72,387	1,046	14.4	75	320	53	18	21	27	284	90	19	17	5	14	66	68	1	10	5	54	80	
Wabash	28,119	311	11.0	13	58	11	5	5	8	113	18	2	7	5	1	5	17	13	2	7	2	16	
Well	24,234	227	9.3	10	47	15	6	2	2	82	20	6	5	1	5	6	14	8	1	8	11	16	
White	18,490	185	10.5	13	42	6	3	3	7	79	10	1	3	4	3	10	8	2	8	8	15	8	
Whitley	16,922	188	11.1	9	40	5	3	3	6	75	19	7	1	1	3	2	10	4	2	6	12	13	
Central Counties	1,087,413	15,176	13.9	825	3,001	898	275	203	434	4,490	1,730	349	349	142	5	27	59	314	71	741	1,024	7	
Bartholomew	22,933	320	13.3	14	67	14	6	6	10	97	44	4	10	5	1	19	12	10	10	17	15	15	
Boone	24,475	341	13.9	15	62	19	2	5	10	135	32	7	7	1	3	4	33	10	3	9	19	15	
Brown	10,034	85	8.4	9	23	6	3	1	8	27	9	1	1	2	1	4	4	4	1	1	2	8	
Clay	37,180	443	11.9	13	94	43	13	6	12	111	42	6	14	3	6	27	39	2	5	2	16	26	
Clinton	27,478	409	14.8	26	85	38	8	7	12	123	41	8	12	6	11	12	22	18	2	13	4	24	
Decatur	18,147	271	14.9	16	44	18	6	6	6	100	31	3	7	1	1	10	22	11	1	8	11	17	
Delaware	50,859	693	13.6	35	171	50	14	8	23	173	66	26	16	5	2	14	47	20	8	9	37	40	
Fayette	12,271	201	16.3	12	38	12	3	2	4	68	18	5	6	4	1	8	6	1	4	1	11	19	
Fountain	19,274	258	13.3	14	46	16	5	4	9	83	26	6	4	1	2	11	11	2	10	1	12	24	
Franklin	15,743	218	13.8	13	37	11	5	2	4	82	23	5	3	1	2	3	19	3	2	12	13	20	
Hamilton	28,591	340	11.8	19	61	16	7	4	12	124	38	7	12	3	1	1	22	6	1	9	1	21	
Hancock	19,211	282	14.6	15	49	21	5	6	8	87	30	11	10	4	1	1	18	14	3	4	2	13	
Hendricks	20,447	294	14.3	23	61	14	7	2	8	109	30	8	5	2	2	1	18	8	1	9	2	14	
Henry	23,569	370	15.6	40	80	21	2	5	8	133	43	6	12	1	1	3	21	8	3	6	2	10	
Johnson	19,733	277	14.0	15	56	21	3	6	12	86	31	6	2	1	5	1	29	14	1	6	2	11	
Madison	71,141	764	10.7	49	199	51	13	12	19	172	73	23	20	8	1	6	58	40	3	6	5	35	
Marion	258,773	3,739	14.4	188	675	180	69	47	128	582	483	93	76	52	1	3	38	138	10	69	21	183	
Monroe	23,254	318	13.6	10	66	32	7	3	2	85	43	8	7	6	1	2	20	24	3	9	2	22	
Montgomery	27,146	380	13.9	20	66	16	4	3	8	144	41	8	7	1	5	1	22	11	4	2	21	18	
Morgan	22,421	319	14.2	16	68	18	11	6	11	90	42	7	13	2	1	36	1	14	4	2	14	15	
Owen	15,372	159	10.3	5	22	17	5	2	2	68	18	4	3	5	3	2	5	9	1	5	2	8	
Parke	22,876	292	12.7	23	72	16	4	3	9	101	32	4	6	3	2	1	20	14	1	14	8	20	
Putnam	20,037	293	14.6	15	56	12	3	8	12	95	36	9	9	2	1	1	16	7	4	5	1	16	
Randolph	28,238	352	12.4	20	72	19	7	5	10	121	45	8	11	2	1	31	9	4	5	1	17	17	
Rush	17,615	255	14.4	9	42	18	2	6	9	87	24	9	4	1	1	9	13	3	8	2	10	22	

TABLE No. 4—Continued.

STATE AND COUNTIES.	Population, Estimated 34 times School Census, 1908.	Total Deaths Reported for Year 1908.	Annual Death Rate Per 1,000 Population.	Stillbirths.	IMPORTANT AGES.					DEATHS FROM IMPORTANT CAUSES.																
					Under 1 Year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pulmonary Consumption.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Group.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrheal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicemia.	Cancer.	Violence.	Smallpox.
Shelby.....	25,347	354	13.9	12	63	15	6	3	13	129	50	1	7	2	1	2	7	24	10	2	4	1	13	26	2	
Tippecanoe.....	39,522	666	16.8	26	90	27	10	7	12	264	75	14	12	5	5	1	3	32	15	3	12	2	40	53		
Tipton.....	19,604	213	10.8	14	51	15	4	3	9	60	23	7	2	2	2	1	2	13	11	1	2	1	11	16		
Union.....	5,117	75	14.6	5	13	2				37	11	3	1										6			
Vermillion.....	16,856	278	16.4	24	97	21	2	4	11	66	24	1	5	3	3	5	2	23	26	2	1	8	9	20		
Vigo.....	79,450	1,198	15.0	66	257	78	25	14	27	288	118	18	29	12	12	1	2	3	63	63	2	21	1	49	128	
Warren.....	7,117	131	18.4	6	28	12	3	2	1	49	9	1	4	4	4			7	15	7	3	2	4	5		
Wayne.....	36,577	588	16.0	28	87	29	11	5	5	213	76	13	12	1	1	2		7	34	14	1	15		32	35	
Southern Counties.....	722,146	9,301	12.8	517	2,035	648	207	177	311	2,577	1,120	166	293	88	8	17	107	146	683	455	36	321	52	385	580	1
Clark.....	33,847	472	14.0	24	85	18	4	14	13	142	45	12	30	5	5	1		1	35	9	2	11	5	19	28	1
Crawford.....	14,056	161	11.4	8	23	17	2	5	9	42	32	4	10	2	2	2		5	12	4	3	2	8	7		
Darke.....	32,935	347	10.5	25	86	34	6	7	9	65	33	6	10	2	2			14	26	21	3	8	1	10	21	
Dearborn.....	23,639	296	12.6	9	36	16	3	4	8	121	27	4	8	2	2			6	22	6	5	1	15	27		
Dubois.....	24,069	212	8.8	8	52	20	6	5	6	49	25	4	3	3	3			4	25	13	1	15	1	8	12	
Floyd.....	33,900	491	14.7	25	75	25	11	7	18	166	62	11	8	7	7			3	37	14	1	21	1	27	32	
Gibson.....	32,886	422	12.8	32	110	32	15	7	19	106	47	7	15	2	2	3	5	15	26	28	3	9	2	16	26	
Greene.....	40,285	453	11.2	32	126	41	13	7	16	89	62	8	17	3	3	2	4	9	30	41	2	6	1	20	34	
Harrison.....	22,731	237	10.4	11	45	7	7	1	6	39	25	5	9	2	2			1	12	8	1	15	2	8	15	
Jackson.....	26,376	372	14.1	18	96	29	7	8	11	95	46	5	12					13	27	32		7	4	23	18	
Jefferson.....	21,869	306	16.6	15	52	15	5	0	11	148	49	4	8					4	31	19		17	3	23	34	
Jennings.....	16,079	206	12.7	8	34	12	2	4	8	83	19	4	7	2	1			1	11	5	2	8	7	11	13	
Knox.....	41,079	602	14.6	35	167	50	23	8	16	131	62	10	9	5	3	24		14	53	40	1	21	5	25	47	
Lawrence.....	31,638	420	13.1	24	103	23	10	6	18	194	56	8	13	1	1			7	30	22	2	18	4	15	21	
Martin.....	15,421	173	11.2	10	51	8	6	4	3	36	21	5	16					3	4	9		10	1	7	6	

Ohio.....	4,214	68	16.1	2	10	4	2	7	2	23	9	1	4	1	1	8	2	1	1	2	6
Orange.....	18,592	226	12.1	7	46	20	3	3	12	52	28	7	6	6	6	22	3	14	...	...	14
Perry.....	21,304	211	9.9	16	54	13	4	4	4	66	34	4	8	4	4	15	9	6	...	...	14
Pike.....	22,176	289	13.0	22	72	29	8	3	13	70	35	4	16	7	1	15	17	9	...	...	0
Posy.....	23,586	304	12.8	21	80	27	6	11	9	63	47	6	6	4	3	18	18	1	10	8	17
Rinley.....	19,393	248	12.7	6	41	14	5	3	7	103	34	9	3	1	...	16	9	4	26	14	18
Scott.....	9,799	103	10.6	3	23	3	2	2	5	37	19	2	2	...	...	5	3	1	9	2	4
Spencer.....	22,998	253	11.0	22	58	24	10	3	13	71	33	1	7	5	7	23	10	5	14	5	7
Sullivan.....	32,882	410	12.4	32	117	34	8	6	12	82	38	10	13	8	...	34	33	4	3	15	40
Switzerland.....	10,010	189	18.8	8	32	9	6	6	5	76	22	3	4	1	...	7	1	13	5	10	11
Vanderburg.....	82,589	1,220	14.7	62	247	80	25	23	38	257	130	14	28	11	6	88	51	1	18	56	89
Warrick.....	24,482	284	11.6	17	67	26	8	1	18	79	29	7	15	2	...	18	19	7	4	17	7
Washington.....	19,768	267	13.5	10	53	13	6	3	9	88	49	3	7	1	...	20	19	4	1	7	10

TABLE No. 5.

Death Rates by Counties for the Year 1908.

STATE AND COUNTIES.	Population Estimated 34 Times School Census 1908.	Total Deaths Reported for the Year 1908.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrheal Diseases Under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicemia.	Cancer.	Violence.	Smallpox.
State of Indiana.....	2,730,144	36,224	13.2	140.1	25.7	32.4	10.8	.6	3.4	7.6	15.2	92.1	59.8	5.6	31.7	5.9	63.6	92.5	.3
Northern Counties.....	920,585	11,747	12.7	105.9	20.3	26.3	7.2	.5	5.5	4.6	14.5	89.9	60.9	6.4	25.2	4.3	66.5	100.2	.2
Adams.....	25,452	215	8.4	113.9	31.4	15.7	7.8		7.8		11.7	35.3	23.5		7.8		62.8	47.1	
Allen.....	89,579	1,174	13.1	101.5	26.7	18.9	8.9		5.5	3.3	16.7	99.3	56.9	4.4	20.0	5.5	66.9	116.0	
Benton.....	12,320	116	9.4	64.9			16.2		6.1	8.1		81.1	24.3	8.1	32.4	8.1	48.7	24.3	
Blackford.....	16,222	179	11.0	141.7	18.4	6.1			5.3	15.9	10.6	105.9	26.5	10.6	26.5	10.6	49.3	67.8	5.3
Blackford.....	18,868	262	13.8	153.6	31.7	26.5	5.3		5.3								95.3	127.1	
Carroll.....																			
Cass.....	35,231	597	16.9	164.6	25.5	36.8			8.5	2.8	22.7	133.4	39.7	14.1	39.7	8.5	82.3	150.4	
DeKalb.....	24,503	317	12.9	85.7	32.6	28.5			6.2	2.0	4.0	32.6	32.6	4.0	20.4	4.1	77.5	93.8	
Elkhart.....	47,667	665	13.9	92.3	18.8	18.8	10.4		6.2	5.6	14.6	92.3	75.5	6.2	29.3	4.1	90.2	106.9	
Fulton.....	17,689	201	11.3	141.3	22.6	11.3			3.4			39.5	56.5		73.4		33.9	28.2	
Grant.....	57,239	763	13.3	145.0	15.7	12.2	6.9	1.7	3.4		26.2	111.8	31.4	6.9	20.	3.4	55.9	80.3	
Howard.....	29,837	449	15.0	191.0	20.1	50.2	3.3		3.3	3.3	20.1	137.4	33.5	16.7	36.8	10.0	67.0	113.9	
Huntington.....	30,607	365	11.9	78.4	22.8	26.1	16.3				3.2	94.7	36.2	3.2	52.2		65.3	71.8	
Jasper.....	14,469	158	10.9	152.0	13.8	13.8			13.8	6.9	6.9	69.1	34.5				76.0	82.9	
Jay.....	27,156	328	12.0	125.2	19.4	14.7	3.6		3.6	25.7	103.1	47.8	47.8	7.3	33.1	3.6	73.6	84.6	
Kosciusko.....	28,189	381	12.8	117.0	10.6	35.4			7.0	24.8	14.1	56.7	35.4	7.0	10.6	3.5	63.8	78.0	
Lagrange.....	15,449	197	12.7	84.1	19.4	12.8			12.8	12.8	19.4	77.6	32.3		58.2	12.8	77.6	45.3	
Lake.....	63,444	1,044	16.4	111.9	25.2	92.9	15.7	4.7	14.1	6.3	11.0	174.9	238.0	4.7	14.1	6.3	62.0	215.9	
Laporte.....	59,007	692	10.7	76.7	14.2	26.5	3.5		1.7	3.5	3.5	133.5	60.7	7.1	7.1	1.7	66.0	123.1	
Marshall.....	25,067	296	11.8	63.8	7.9	11.9	7.9		3.9	3.9	11.9	59.8	39.8		55.8		73.7	79.7	

Miam.	29,543	367	9.0	111.7	27.0	27.0	10.1				30.4	91.3	30.4	10.1	30.4	10.1	74.4	98.1
Newton.	10,612	96	9.3	75.3	28.2	9.4	18.8		9.4	28.2	18.8	103.6	18.8	9.4	9.4	9.4	73.3	18.8
Noble.	22,627	230	14.1	44.1	17.6	30.9	8.6		4.4			53.9	25.5	22.0	8.8	4.4	88.3	92.8
Porter.	20,965	248	11.8	57.2	4.7	14.3	4.7				14.3	119.2	57.2		23.8		57.2	104.9
Puhsaki.	15,928	143	8.9	75.3	6.2	18.8			12.5			62.7	37.6	18.8	31.3		25.1	50.2
Starke.	12,404	125	10.0	56.4		16.1	8.0				8.0	72.5	80.6	8.0	24.1		24.1	128.9
Steuben.	13,359	191	14.2	89.8	22.4	14.9				7.4	7.4	72.8	37.4	14.9	22.4	14.9	67.3	59.8
St. Joseph.	72,387	1,046	14.4	124.3	26.2	23.4	6.9		19.3	4.1	22.1	91.1	93.9	1.3	13.8	6.9	74.5	110.5
Wabash.	28,119	311	11.0	64.0	7.1	24.8	17.7			3.5	17.7	60.4	46.2	7.1	24.8	7.1	58.9	78.2
Wells.	24,234	227	9.3	82.5	24.7	20.6	4.1				24.7	57.7	33.0	4.1	33.0		45.3	61.8
White.	18,490	165	10.5	54.0	5.4	16.2	21.6			16.2	24.7	54.0	43.2	10.8	43.2		81.8	43.2
Whitley.	16,922	158	11.1	112.2	41.3	5.9				17.7	11.8	59.0	23.6		35.4		70.9	76.8
Cent'al Counties.	1,087,413	15,176	13.9	159.0	32.0	32.0	13.0	4	2.4	5.4	12.5	92.5	56.9	5.4	28.8	6.5	68.1	94.1
Bartholomew.	23,933	320	13.3	183.8	16.7	41.7	20.8				4.1	79.3	50.1		41.7		71.0	62.6
Boone.	24,475	341	13.9	130.7	28.6	28.6			4.0	12.2	16.3	134.8	40.8	12.2	36.7	4.0	69.4	61.2
Brown.	10,034	85	8.4	89.6	9.9	9.9	19.9					38.8	39.8		9.9	9.9	19.9	70.7
Clay.	37,180	443	11.9	112.9	16.1	37.6	8.0				16.1	72.6	104.8	5.3	13.4	5.3	43.0	69.9
Clinton.	27,478	409	14.8	149.2	29.1	43.6	21.8			40.0	43.6	80.0	65.5	7.2	47.3	14.5	87.3	109.1
Devatur.	18,147	271	14.9	170.8	16.5	38.5	5.5				55.1	121.2	60.6	5.5	44.0		60.6	93.6
Delaware.	50,839	693	13.6	129.7	51.1	31.4	9.8		3.9		27.5	92.4	57.0	3.9	15.7	17.6	72.7	78.6
Fayette.	12,271	201	16.3	146.6	40.7	46.8					16.2	65.1	46.8	8.1	32.5	8.1	59.6	154.8
Fountain.	19,274	258	13.3	134.8	31.1	20.7	5.1		10.3		5.1	57.0	57.0	10.3	51.8		62.2	124.5
Franklin.	15,743	218	13.8	146.0	31.7	19.0	6.3		12.7		1.9	120.6	1.9	12.7	76.2		82.5	127.0
Hamilton.	24,591	340	11.8	132.9	24.4	41.9	10.4			3.4	3.4	76.9	20.9	3.4	31.4	3.4	73.4	59.4
Hancock.	19,211	282	14.6	156.1	57.2	52.0	20.8	5.2		5.2	5.2	93.6	72.8	15.6	20.8	10.4	67.6	145.7
Hendricks.	20,447	284	14.3	146.7	39.1	24.4	9.7		9.7			88.0	39.1	4.8	44.0	9.7	68.4	68.4
Henry.	24,569	370	15.6	182.4	25.4	50.9	4.2			4.2	12.7	159.1	33.9	12.7	25.4	8.4	42.4	55.1
Johnson.	19,733	277	14.0	172.3	30.4	10.1	5.0		25.3		5.0	146.9	70.9	5.0	30.4		55.7	70.9
Madison.	71,141	764	10.7	102.6	32.3	28.1	11.2		1.4		8.4	81.5	56.2	4.2	8.4	7.0	49.1	77.3
Marion.	258,773	3,759	14.4	186.6	35.9	29.3	20.0	3	2.7	1.1	14.6	90.8	53.3	3.8	26.6	8.1	70.7	93.9
Monroe.	23,254	318	13.6	184.9	34.4	30.1	25.8	4.3			8.6	98.0	103.2	12.9	33.7	8.6	94.6	90.3
Montgomery.	27,146	319	13.9	151.0	29.4	25.7	3.6		18.4		3.6	81.0	40.5		17.8	3.6	98.7	66.3
Morgan.	22,421	319	14.2	187.3	31.2	57.9	8.9		26.7		4.4	100.5	62.4		17.8	8.9	62.4	66.9
Owen.	15,372	159	10.3	117.0	26.0	19.5	32.5			19.5	13.0	32.5	58.5	6.5	32.5	13.0	52.0	52.0
Parke.	22,876	292	12.7	159.8	17.4	26.2	13.1		8.7		4.3	79.4	61.1	4.3	61.1		34.8	87.4
Pulaski.	20,037	283	14.6	179.6	44.9	49.9	9.9		4.9		3.5	100.7	31.8	19.9	29.9	4.9	70.8	94.8
Randolph.	21,238	332	12.4	159.3	28.3	39.9	7.0			5.6	5.6	100.7	31.8	17.7	47.7	3.5	40.2	60.2
Rush.	17,615	255	14.4	136.2	51.0	22.7	5.8					51.0	73.8	17.0	45.4	11.3	107.8	124.8

TABLE No. 5—Continued.

STATE AND COUNTIES.		Population Estimated 34 Times School Census 1908.	Total Deaths Reported for the Year 1908.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.														
					Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrheal Diseases Under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicæmia.	Cancer.	Violence.	Smallpox.
Shelby.....	25,347	354	13.9	197.2	39.4	27.6	7.8	3.9	7.8	.....	27.6	94.6	39.4	7.8	15.7	3.9	51.2	102.5	.....
Tipton.....	39,522	666	16.8	180.7	35.4	30.3	12.6	.....	.....	2.5	7.5	80.9	37.9	15.2	30.3	5.0	101.2	134.1	5.0
Tipton.....	19,801	213	10.8	117.2	35.6	10.1	10.1	.....	5.0	.....	10.1	66.2	19.5	19.5	.....	.....	56.0	81.5	.....
Union.....	5,117	75	14.6	214.9	58.6	19.5	.....	.....	.....	.....	.....	.....	.....	.....	39.0	.....	117.2	58.6	.....
Vermilion.....	16,856	278	16.4	142.3	5.9	29.6	17.7	.....	.....	29.6	11.8	136.4	154.6	5.9	47.4	5.9	53.3	118.6	.....
Vigo.....	79,450	1,198	15.0	148.5	22.6	38.5	15.1	1.2	2.5	16.3	3.7	117.0	79.2	2.5	26.4	6.2	61.6	161.1	.....
Warren.....	7,117	131	18.4	126.4	14.0	58.2	.....	.....	.....	.....	.....	210.7	98.3	2.7	42.1	.....	56.2	70.2	.....
Wayne.....	36,577	588	16.0	207.7	35.5	32.8	2.7	.....	5.4	.....	19.1	92.9	38.2	2.7	41.0	.....	87.4	95.6	.....
Southern Counties.....	722,146	9,301	12.8	155.0	22.9	40.5	12.1	1.1	2.3	14.8	20.2	94.5	63.0	4.9	44.4	7.2	53.3	80.3	.1
Clark.....	33,840	472	14.0	132.9	35.4	88.6	14.7	.....	2.9	.....	2.9	103.4	26.5	5.9	32.5	14.7	58.1	82.7	2.9
Crawford.....	14,058	161	11.4	227.6	28.4	71.1	14.2	14.2	.....	35.5	.....	85.2	33.4	.....	21.3	14.2	56.9	46.9	.....
Davies.....	32,935	347	10.5	100.9	18.2	20.3	6.0	.....	.....	42.5	6.0	78.9	37.7	9.1	24.2	3.0	30.3	63.7	.....
Dearborn.....	23,439	264	12.6	123.7	17.0	34.1	8.5	.....	.....	25.3	.....	93.8	25.5	.....	21.3	.....	63.9	115.1	.....
Dubois.....	24,069	212	8.8	103.8	16.6	16.6	12.4	.....	.....	16.6	4.1	103.8	34.0	4.1	62.3	4.1	33.2	49.8	.....
Floyd.....	33,380	491	14.7	185.8	32.9	23.9	20.9	.....	.....	8.9	.....	110.8	41.9	2.9	62.8	2.9	80.8	95.8	.....
Gibson.....	32,886	422	12.8	142.9	21.2	43.6	6.0	.....	9.1	15.2	45.6	79.0	85.1	.....	27.3	6.0	48.6	85.1	.....
Greene.....	40,285	453	11.2	153.9	19.8	42.1	7.4	.....	4.9	9.9	22.3	74.4	101.7	4.9	19.8	2.4	49.6	84.3	.....
Harrison.....	22,751	237	10.4	109.7	21.9	39.5	8.7	.....	.....	.....	4.3	52.6	35.1	.....	65.8	8.7	35.1	65.8	.....
Jackson.....	26,376	372	14.1	174.4	18.9	46.4	.....	.....	.....	49.2	.....	102.3	121.3	.....	26.5	15.1	83.4	68.2	.....
Jefferson.....	21,969	366	16.6	223.0	18.2	36.4	.....	.....	.....	.....	18.2	141.1	86.4	.....	77.3	13.6	104.6	109.2	.....
Jennings.....	16,079	205	12.7	118.1	24.8	43.5	12.4	6.2	.....	.....	6.2	68.4	31.0	12.4	49.7	.....	68.4	80.8	.....
Knox.....	41,079	902	14.6	150.9	24.3	21.9	12.1	.....	7.3	58.4	34.0	129.0	97.3	2.4	51.1	12.1	90.8	114.4	.....
Lawrence.....	31,838	420	13.1	175.8	25.1	40.8	3.1	.....	.....	.....	21.9	94.2	69.0	6.2	56.5	12.5	47.1	65.9	.....
Marion.....	15,421	173	11.2	136.1	32.4	103.7	6.4	.....	.....	19.4	19.4	25.9	53.3	.....	64.8	6.4	45.3	38.9	.....

Ohio.....	4,214	68	16.1	213.5	23.7	94.9	23.7	23.7	16.1	16.1	189.8	47.4	23.7	47.4	142.3
Orange.....	18,562	226	12.1	150.6	37.6	32.2	32.2	32.2	118.3	16.1	118.3	16.1	75.3	37.6	75.3
Perry.....	21,304	211	9.9	159.5	18.7	37.5	18.7	18.7	70.4	42.2	70.4	42.2	75.0	28.1	28.1
Pike.....	22,176	289	13.0	157.8	18.0	72.1	31.5	4.5	9.3	4.6	67.6	76.6	18.0	40.5	81.1
Posey.....	23,586	304	12.8	199.2	25.4	25.4	16.9	12.7	18.0	45.0	76.3	76.3	4.2	33.9	72.0
Ripley.....	19,363	248	12.7	175.3	46.4	15.4	5.1	.....	5.1	.....	82.5	46.4	20.6	72.1	92.8
Scott.....	9,709	103	10.6	195.6	.....	20.5	21.7	.....	51.4	30.8	51.4	30.8	10.3	20.5	41.1
Spencer.....	22,998	253	11.0	143.4	4.3	30.4	21.7	.....	30.4	30.0	100.0	43.4	21.7	21.7	30.4
Sullivan.....	32,882	410	12.4	115.5	30.4	38.5	24.2	.....	3.0	3.0	103.4	100.3	12.1	45.6	121.6
Switzerland.....	10,010	189	18.8	219.7	29.9	39.9	9.9	.....	69.9	69.9	199.8	9.9	129.8	99.9	109.9
Vanderburg.....	82,589	1,220	14.7	157.4	16.9	31.4	13.3	7.2	6.0	44.8	106.5	61.7	1.2	21.7	67.8
Warrick.....	24,482	284	11.6	118.4	28.5	61.2	8.1	.....	20.4	32.6	73.5	77.6	28.5	40.8	28.5
Washington.....	19,768	267	13.5	247.8	15.1	35.4	5.0	.....	.....	40.4	101.1	45.5	10.1	35.4	50.5

TABLE No. 6.

Annual Death Rates for Nine Years, 1900 to 1909, with Averages of Cities of 5,000 Population and Over, Compared with Rural and State Rates.

	Popula- tion.	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average.
STATE.....	2,730,144	14.2	13.8	12.8	12.2	13.5	13.7	13.5	13.4	12.5	13.3
CITIES—											
Indianapolis.....	233,150	20.3	16.9	16.2	18.1	17.4	16.0	16.4	16.4	14.3	16.7
Evansville.....	64,442	15.2	14.5	11.2	14.7	14.9	14.4	15.1	13.8	14.4	14.2
Fort Wayne.....	56,304	13.1	14.8	14.1	14.8	14.0	13.9	16.3	15.7	14.6	14.6
Terre Haute.....	51,135	16.1	19.1	20.6	18.3	23.1	21.0	22.5	17.6	17.2	19.5
South Bend.....	43,599	16.1	15.0	14.6	19.2	15.9	17.1	16.8	16.1	16.3	16.2
Marion.....	24,181	16.9	15.8	15.5	17.5	16.6	14.0	13.6	11.5	9.6	14.5
Muncie.....	23,118	19.9	16.0	16.7	18.1	17.8	16.0	14.8	15.7	15.9	16.7
New Albany.....	23,005	17.4	18.0	17.4	16.6	18.1	18.1	16.1	17.6	15.8	17.2
Anderson.....	22,505	16.5	17.5	16.7	14.6	15.5	12.1	13.3	13.1	11.2	14.5
Lafayette.....	20,223	14.5	16.8	17.9	18.4	21.5	21.6	18.6	16.0	17.7	18.1
Michigan City.....	20,000	10.7	14.7	14.5	18.6	14.7	14.1	14.3	15.4	12.1	14.3
Hammond.....	19,995	10.5	14.8	18.1	19.1	15.4	15.2	17.9	17.2	14.6	15.8
Richmond.....	19,602	17.4	16.6	18.3	14.0	15.8	14.0	16.1	15.2	15.6	15.9
Elkhart.....	17,084	16.1	13.2	12.5	14.3	15.4	13.6	14.0	14.2	13.4	14.0
Logansport.....	16,730	15.4	17.5	15.1	15.9	17.6	17.1	16.0	14.8	18.4	16.4
Vincennes.....	13,947	12.5	19.2	17.8	15.1	22.2	20.7	20.0	18.5	18.6	18.3
Elwood.....	13,821	17.4	15.1	14.0	14.7	13.4	11.6	8.4	8.6	9.4	12.5
Kokomo.....	12,834	16.2	16.0	16.1	20.8	18.5	18.7	20.0	18.1	19.7	18.2
Jeffersonville.....	12,000	15.5	22.3	19.5	21.7	20.3	17.3	19.7	20.2	13.1	19.1
East Chicago.....	10,979	4.0	6.5	10.1	9.3	12.4	14.5	18.5	32.2	26.5	14.9
Peru.....	10,517	12.6	13.0	13.4	12.1	13.3	11.2	13.8	13.5	12.0	12.7
Laporte.....	10,004	13.1	15.4	13.7	17.3	18.2	17.5	20.7	19.8	15.0	16.7
Mishawaka.....	9,989	11.4	10.5	13.8	17.0	19.2	24.3	21.4	21.9	13.0	16.9
Huntington.....	9,936	12.9	13.4	13.2	16.5	17.1	12.7	13.4	12.2	14.0	13.9
Washington.....	8,932	14.9	16.5	14.6	15.5	15.9	14.2	16.5	11.5	13.2	14.7
Brasil.....	8,827	7.8	10.0	14.1	8.0	20.0	12.5	12.8	16.9	13.3	12.8
Goshen.....	8,711	14.0	10.6	11.8	11.1	12.5	14.0	18.1	16.3	15.3	13.7
Frankfort.....	8,645	17.3	15.5	14.1	17.0	15.1	20.0	18.7	17.6	17.2	16.9
Wabash.....	8,592	11.3	11.0	13.8	9.8	14.3	12.7	13.0	12.0	14.6	12.5
Shelbyville.....	8,264	12.9	14.2	13.7	14.7	16.5	16.5	16.4	14.0	11.7	14.5
Madison.....	7,945	19.4	16.3	18.0	18.1	17.7	15.0	18.4	19.8	19.7	18.0
Bloomington.....	7,829	10.8	11.8	17.3	14.8	16.9	18.9	19.7	14.7	14.9	15.5
Bedford.....	7,672	10.5	10.9	12.4	11.3	19.5	18.1	18.0	19.2	16.8	15.2
Columbus.....	7,595	18.4	16.3	15.8	15.8	18.5	14.8	17.1	15.1	17.7	16.6
Linton.....	6,737			8.6	9.7	12.5	11.8	11.7	10.4	10.6	10.7
Crawfordsville.....	6,492	17.1	16.4	17.4	13.9	20.5	20.0	20.3	22.1	19.7	18.6
Princeton.....	6,394	9.8	11.0	10.9	9.6	15.3	17.2	13.9	14.5	19.2	13.5
Connersville.....	6,114	12.7	16.0	13.2	13.9	17.6	14.8	15.3	15.3	18.6	15.3
Mt. Vernon.....	6,072	19.0	21.6	22.4	16.0	17.9	18.4	17.9	18.8	15.1	18.5
Whiting.....	6,037					11.4	10.3	14.1	14.7	13.5	12.8
Alexandria.....	6,030	12.3	16.1	13.9	14.1	11.4	4.4	6.9	7.9	9.9	10.7
Hartford City.....	5,789	8.8	12.2	12.0	11.1	13.0	12.0	8.8	11.9	9.8	11.0
Valparaiso.....	5,771	11.9	11.9	10.9	13.9	15.6	11.5	12.4	11.2	13.3	12.5
Seymour.....	5,593	14.2	13.9	12.9	13.0	16.1	15.8	15.6	16.6	21.6	15.5
Greenburg.....	5,288	15.8	20.3	17.6	16.9	18.5	16.2	12.2	14.7	17.5	17.6
Aurora.....	5,218									10.9	10.9
Average.....	1,013,629	14.6	15.3	15.3	15.4	16.8	15.8	16.4	15.6	13.4	15.4
COUNTRY.....	1,639,382	14.3	14.9	13.3	12.9	14.2	13.9	13.3	11.6	11.6	13.3

TABLE A.

Births by Months, Color and Nationality of Parents, for the Year Ending December 31, 1908.

COUNTIES.	1908.												SEX.			COLOR.				NATIONALITY OF PARENTS.				Not Re-ported.							
													Males.		Females.		Total.		White.		Col'd.		American.		Foreign.		Mothers.		Fathers.		
																															January.
Adams.....	51	51	51	38	43	44	40	59	35	47	38	21	274	244	518	274	244	472	493	33	18	6	3	181	129	5	3				
Allen.....	134	154	172	135	130	128	132	128	146	116	94	123	831	761	1,592	827	755	1,377	1,444	181	129	5	3	1,444	1,444	181	129				
Bartholomew.....	49	37	50	35	53	40	43	54	51	38	35	36	279	241	520	273	238	500	504	7	5	3	1	504	504	7	5				
Benton.....	22	31	30	18	26	17	35	28	18	29	31	20	155	150	305	154	150	279	282	21	21	3	3	282	282	21	21				
Blackford.....	35	29	38	45	27	40	37	34	50	32	26	35	237	191	428	235	191	403	413	14	7	5	2	403	413	14	7				
Boone.....	29	39	43	18	40	40	45	42	47	38	44	37	233	229	462	222	228	456	459	2	1	2	1	456	459	2	1				
Brown.....	22	19	13	12	23	21	19	14	15	7	15	11	100	91	191	100	91	185	187	5	2	3	1	185	187	5	2				
Carroll.....	27	39	28	30	34	34	33	29	44	43	26	27	199	195	394	199	195	375	384	5	2	7	1	375	384	5	2				
Cass.....	47	44	56	48	55	64	52	70	53	58	47	38	386	308	632	325	306	583	598	24	17	17	9	583	598	24	17				
Clark.....	60	53	75	35	32	43	47	55	57	38	27	38	292	268	560	265	248	532	540	13	7	7	5	532	540	13	7				
Clay.....	25	33	32	24	24	30	22	32	25	42	46	14	173	149	322	168	148	284	291	32	27	4	2	284	291	32	27				
Clinton.....	56	50	44	42	52	48	60	60	35	42	42	48	297	268	565	287	268	553	555	6	6	3	3	553	555	6	6				
Crawford.....	17	26	17	17	21	20	32	27	29	22	18	27	159	124	283	159	124	275	278	2	1	3	1	275	278	2	1				
Davies.....	50	65	75	63	60	60	61	67	65	76	72	44	399	389	788	398	386	763	772	4	1	7	1	763	772	4	1				
Dearborn.....	46	39	36	27	30	40	39	25	38	28	32	39	215	204	419	213	202	387	396	8	8	19	10	387	396	8	8				
Decatur.....	45	37	28	23	32	25	40	44	50	17	32	22	214	191	405	214	191	388	396	11	4	3	2	388	396	11	4				
Dekalb.....	44	42	51	31	55	33	43	41	39	30	41	34	261	223	494	261	223	452	454	22	21	2	2	452	454	22	21				
Delaware.....	115	113	112	123	96	81	119	101	81	91	74	62	607	561	1,168	596	545	1,131	1,135	24	20	3	3	1,131	1,135	24	20				
Dubois.....	35	35	33	35	49	32	37	53	37	53	47	28	235	225	460	235	225	445	454	9	1	1	1	445	454	9	1				
Elkhart.....	70	85	91	81	89	76	81	89	84	85	86	76	516	476	992	516	475	913	921	54	48	13	11	913	921	54	48				
Fayette.....	21	32	28	28	23	20	27	31	23	26	23	25	157	150	307	155	148	298	298	5	6	1	1	298	298	5	6				
Floyd.....	46	34	44	40	39	38	39	31	31	42	33	47	228	235	463	220	230	442	453	16	7	2	2	442	453	16	7				
Fountain.....	30	24	49	35	40	28	47	38	44	32	29	30	222	204	426	222	204	415	416	6	6	2	4	415	416	6	6				
Franklin.....	19	21	29	23	20	28	24	36	19	29	25	28	156	145	301	156	145	285	290	6	2	4	1	285	290	6	2				
Fulton.....	32	28	40	31	25	22	28	31	29	23	37	20	196	150	346	196	150	340	342	4	2	4	1	340	342	4	2				

TABLE A—Continued.

COUNTIES.	1908.												Sex.		Color.				NATIONALITY OF PARENTS.				Not Re-ported.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	White.		Col'd.		American.		Foreign.			
																Males.	Females.	Males.	Females.	Males.	Females.	Males.		Females.	
Gibson.....	67	66	61	57	50	44	57	63	58	66	51	59	392	307	699	384	295	8	12	687	687	6	2	12	
Grant.....	86	91	106	101	93	103	117	103	95	96	77	88	562	579	1,141	553	572	10	7	1,082	1,082	37	33	10	
Greene.....	74	72	75	75	77	79	83	80	80	80	79	80	482	482	964	482	482	2	1	921	921	62	51	7	
Hamilton.....	46	46	35	58	41	37	61	62	56	44	52	43	306	287	594	306	285	2	1	587	587	4	9	4	
Hancock.....	39	33	30	27	39	43	29	34	39	19	20	39	208	183	391	206	182	2	1	377	378	9	9	1	
Harrison.....	31	27	24	42	30	37	36	50	50	49	40	33	251	198	449	251	197	1	1	434	438	3	3	4	
Hendricks.....	29	46	32	37	48	38	47	50	29	26	27	25	227	207	434	224	206	3	1	425	426	2	2	1	
Henry.....	61	55	63	51	49	54	59	61	61	46	42	42	341	303	644	340	303	3	1	628	633	4	3	4	
Howard.....	70	64	65	56	63	64	59	48	48	50	42	49	353	305	658	351	303	2	2	618	629	23	15	5	
Huntington.....	54	50	59	36	65	64	64	55	48	59	54	45	339	314	653	339	314	1	1	632	640	14	6	2	
Jackson.....	63	54	57	53	37	54	48	62	68	60	60	46	352	304	656	349	302	3	2	631	643	18	5	9	
Jasper.....	20	25	17	19	18	21	19	19	30	14	19	16	124	106	230	124	106	1	1	608	622	6	1	9	
Jay.....	59	59	58	52	44	40	49	58	65	48	57	42	332	299	631	331	298	1	1	608	622	3	3	8	
Jefferson.....	47	29	31	46	38	29	38	50	42	30	29	28	211	158	369	203	219	6	7	422	430	5	2	1	
Jennings.....	24	28	39	30	30	39	31	39	28	31	21	29	211	158	369	204	157	7	1	358	362	5	2	1	
Johnson.....	36	41	35	35	35	37	30	35	27	46	35	32	225	199	424	230	197	5	2	415	417	3	5	5	
Knox.....	80	95	93	78	84	74	78	91	78	68	67	61	497	460	957	492	456	5	4	909	919	31	23	9	
Kosciusko.....	63	48	52	53	68	44	53	48	46	56	39	26	324	307	631	323	307	1	1	612	616	11	8	2	
Lagrange.....	34	30	36	30	34	17	39	26	33	24	26	26	178	179	357	178	178	1	1	348	349	5	5	2	
Lake.....	107	125	121	108	80	96	111	141	122	100	114	110	733	610	1,343	731	609	2	1	691	732	631	594	10	
Laporte.....	71	90	119	83	94	81	77	91	77	64	76	78	511	490	1,001	511	489	1	1	747	768	231	213	9	
Lawrence.....	70	75	78	90	58	55	72	72	75	67	64	64	429	411	840	429	411	8	3	817	822	9	5	5	
Madison.....	126	112	145	115	109	120	121	135	121	120	114	106	757	687	1,444	749	684	8	3	1,348	1,368	78	61	4	
Marion.....	490	422	422	432	429	441	428	463	432	397	405	460	2,746	2,462	5,208	2,462	2,217	249	265	4,549	4,693	504	473	116	
Marshall.....	46	34	59	49	43	42	47	56	41	28	41	35	258	263	521	257	263	1	1	505	510	8	6	3	
Martin.....	28	20	21	18	21	20	23	28	23	21	22	26	144	127	271	144	127	2	2	261	262	2	1	2	
Miami.....	47	52	55	48	50	51	38	45	40	38	44	45	309	274	583	307	272	2	2	550	559	24	17	4	
Monroe.....	55	49	46	46	44	51	38	42	40	40	44	44	304	237	541	304	232	300	4	5	523	528	7	4	4
Montgomery.....	61	65	65	59	57	59	57	59	62	46	34	53	359	306	665	353	301	6	5	655	665	3	5	2	
Morgan.....	24	21	22	29	36	23	37	38	47	26	39	28	208	202	410	207	201	1	1	400	408	2	1	3	

[illegible]

Fayette.....	307	98	74	45	31	22	15	8	5	2	2	1	1	8
Floyd.....	463	138	118	62	46	23	23	12	16	3	3	1	7	8
Fountain.....	426	131	93	61	35	34	29	15	13	3	3	2	2	6
Franklin.....	301	82	52	35	32	24	14	22	13	2	6	2	2	10
Fulton.....	346	111	70	50	40	27	11	14	8	4	4	2	2	1
Gibson.....	699	174	139	113	86	57	30	38	19	6	6	7	5	9
Grant.....	1,141	335	262	162	97	89	67	41	24	17	14	9	8	16
Greene.....	921	239	187	146	125	70	50	40	25	16	15	5	1	2
Hamilton.....	594	158	138	90	57	51	29	16	17	9	9	8	1	11
Hancock.....	391	110	91	66	37	35	17	6	10	9	1	5	3	1
Harrison.....	449	102	91	72	59	47	19	19	13	5	6	2	4	10
Hendricks.....	434	145	91	59	46	35	18	13	5	7	7	3	1	4
Henry.....	644	215	139	101	69	37	20	18	15	7	9	1	1	12
Howard.....	658	182	154	96	71	46	27	21	20	10	6	3	5	17
Huntington.....	653	162	146	112	72	54	29	19	19	8	6	6	4	16
Jackson.....	656	155	141	110	56	62	44	25	24	15	6	3	3	5
Jasper.....	230	56	43	30	29	14	19	14	5	5	1	1	2	11
Jay.....	631	168	151	100	60	42	37	20	12	14	7	3	2	9
Jefferson.....	437	132	98	68	49	34	24	18	6	5	2	1	1	7
Jennings.....	369	85	77	50	64	31	27	16	10	6	1	1	1	1
Johnson.....	424	123	98	70	55	30	19	13	6	2	1	2	1	4
Knox.....	957	235	196	130	114	76	53	48	31	21	16	6	4	27
Koehuko.....	631	180	133	111	69	59	22	26	14	8	8	1	6	9
Lavrange.....	357	90	78	69	31	27	19	12	9	8	5	1	1	5
Lake.....	1,343	363	304	193	137	81	70	35	29	24	10	9	10	48
Laporte.....	1,001	294	293	126	98	85	46	38	21	20	19	8	8	5
Lawrence.....	840	205	177	118	97	69	45	38	27	23	11	3	3	19
Madison.....	1,444	378	309	220	157	112	68	45	49	25	18	14	19	30
Marion.....	5,208	1,861	1,216	747	501	290	197	136	94	66	34	19	38	9
Marshall.....	321	147	127	69	43	40	28	26	12	9	4	8	6	3
Martin.....	271	64	48	35	39	16	29	15	11	9	1	1	1	4
Miami.....	583	176	133	88	68	30	27	21	12	10	3	3	9	3
Monroe.....	541	146	111	76	63	32	30	22	22	12	10	3	2	12
Montgomery.....	665	207	140	99	75	47	26	23	15	4	6	6	2	12
Morgan.....	410	105	86	65	44	34	23	17	7	6	9	2	2	10
Newton.....	281	59	54	52	25	22	17	7	7	6	5	2	2	5
Noble.....	513	138	110	72	66	32	25	21	14	10	4	5	3	13
Ohio.....	68	21	11	7	6	3	5	2	2	1	1	2	2	6
Orange.....	364	118	70	44	32	36	11	9	9	8	4	2	2	4
Owen.....	303	87	54	65	32	17	13	9	7	5	5	5	1	8

TABLE B—Continued.

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and over.	Not reported.
Parke...	492	127	110	78	49	49	29	21	11	3	4	3	2	6
Perry...	454	86	100	73	50	38	37	15	15	9	6	3	4	18
Pike...	532	122	102	78	58	48	33	27	19	11	9	4	4	19
Porter...	392	92	88	48	50	25	19	16	15	4	3	4	2	26
Posey...	480	102	115	81	51	38	31	24	9	13	7	6	2	11
Pulaski...	235	48	36	35	20	22	18	20	7	7	1	2	3	16
Putnam...	476	129	94	70	41	42	31	18	11	7	5	3	1	24
Randolph...	655	185	135	103	75	44	28	20	13	5	4	4	3	26
Ripley...	390	106	72	56	49	27	21	8	6	6	5	2	2	30
Rush...	425	128	104	61	50	27	14	9	9	5	3	1	2	12
Scott...	229	53	49	31	30	21	13	6	8	3	4	3	1	7
Shelby...	533	160	131	59	55	41	27	10	13	4	3	2	2	26
Spencer...	319	72	48	50	35	35	24	17	7	5	1	1	4	17
Stark...	203	48	27	37	27	21	12	14	5	2	3	1	1	5
Steuben...	228	57	62	34	23	16	8	9	5	1	2	1	1	11
St. Joseph...	2,237	604	536	337	205	172	104	76	53	41	24	14	32	39
Sullivan...	842	204	149	115	98	73	48	30	26	17	19	8	2	53
Switzerland...	208	47	40	38	15	23	15	13	6	6	1	2	1	3
Tippecanoe...	666	183	150	73	65	42	26	23	18	8	12	3	3	50
Tipton...	421	108	92	48	57	38	18	17	18	9	5	1	1	9
Union...	126	44	19	23	17	10	2	4	1	2	2	2	2	2
Vanderburgh...	1,561	482	362	215	161	122	73	41	44	19	20	6	16	30
Vermillion...	480	115	94	77	60	44	31	16	8	5	3	2	5	20
Vigo...	1,617	536	342	212	174	104	74	40	35	23	13	8	4	52

Wabash.....	406	132	97	86	51	24	16	14	8	10	5	4	1	18
Warren.....	253	80	53	41	27	15	18	11	5	6	1	2	1	3
Warrick.....	494	109	104	71	68	39	41	14	14	9	5	3	2	5
Washington.....	375	96	86	53	36	31	27	16	8	6	7	3	4	2
Wayne.....	763	259	167	129	63	45	29	23	11	13	4	5	3	12
Wells.....	550	152	110	91	65	44	27	17	17	10	2	1	3	11
White.....	360	100	74	45	38	44	23	7	12	7	2	1	5	2
Whitley.....	318	79	66	49	42	20	16	13	3	12	4	4	2	8
Grand total.....	56,713	16,146	12,212	8,344	6,113	4,206	2,844	2,011	1,406	933	596	347	399	1,104

Wabash.....	4	56	224	254	158	127	56	19	10	.....	2	8	6	4	3	2	2	6	4	1
Warren.....	8	32	113	141	77	63	43	13	6	.....	1	2	1	3	3	1	2	4	4	4
Warrick.....	6	48	195	240	178	159	80	25	8	.....	2	5	3	4	5	13	13	5	6	.....
Washington.....	5	40	135	184	140	118	66	19	11	.....	3	7	6	3	2	7	7	9	3	1
Wayne.....	11	71	362	446	264	213	103	28	11	.....	.....	9	2	8	6	2	2	4	6	7
Wells.....	14	72	243	268	204	179	67	21	6	.....	2	10	6	6	.....	6	6	2	6	5
White.....	2	28	133	202	152	108	52	18	9	.....	.....	8	6	10	3	5	5	3	4	4
Whitley.....	3	20	129	174	122	99	45	17	8	.....	.....	5	3	5	3	7	7	3	1	2
Grand total.....	768	5,990	24,696	30,753	20,593	16,318	7,890	2,661	1,172	18	135	19	853	376	918	621	595	595	511	473

TABLE C.

Marriages by Months, Color and Nationality, Year Ending December 31, 1908.

COUNTIES.	1908.												Color.*		NATIONALITY.				Total.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	American.		Foreign.		Not Reported.				
													Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.		Grooms.	Brides.
Adams.....	18	17	18	14	11	19	13	15	12	27	26	24	214	2	194	190	24			214	
Allen.....	66	40	30	61	50	82	54	41	73	63	62	76	13		666	666	48	32		666	
Bartholomew.....	14	17	13	22	15	22	7	17	24	26	21	17	214	1	179	183	27	19	9	215	
Benton.....	2	19	9	5	2	6	3	5	12	6	6	4	78		76	78	2			78	
Blackford.....	10	16	10	10	13	18	14	17	10	10	13	26	167		157	156	10	11		167	
Boone.....	20	17	13	11	12	12	11	18	20	22	25	21	200	2	202	202				202	
Brown.....	3	2	3	12	8	2	4	4	4	6	0	2	50		50	50				50	
Carroll.....	11	14	15	14	7	12	9	3	11	11	10	19	136		134	136	2			136	
Cass.....	21	20	24	21	23	34	15	32	35	24	43	26	315	3	306	313	12	5		318	
Clark.....	72	65	59	90	71	66	85	98	98	104	87	79	848	126	956	961	17	12	1	974	
Clay.....	28	13	33	24	23	36	19	24	23	16	28	31	297	1	282	291	16	7		298	
Clinton.....	20	20	25	14	11	26	25	22	34	25	20	29	279	2	280	281	1			281	
Crawford.....	9	11	12	10	8	12	8	11	9	10	12	12	124		74	79	34	29	16	124	
Davies.....	30	19	18	19	13	23	15	15	22	29	31	28	260	2	255	260	7	2		262	
Dearborn.....	13	16	7	21	14	17	19	12	19	17	16	22	190	3	188	190	5	3		193	
Decatur.....	9	14	12	11	15	8	10	14	13	17	15	20	157	1	155	157	3		1	158	
Delaware.....	22	6	21	15	18	19	18	20	24	24	25	26	239		233	235	6	3		239	
Dubois.....	46	29	19	43	28	44	46	36	38	23	44	44	422	18	433	430	5	9	2	440	
Dubois.....	8	13	5	9	26	14	7	5	23	26	18	15	168		167	168	1			168	
Elkhart.....	42	29	37	28	25	42	28	32	37	32	35	35	402		398	378	24	24		402	

Fayette	4	4	8	6	14	12	12	7	8	10	14	103	2	105	105	5	2	105
Floyd	22	18	12	16	22	14	18	36	24	25	23	223	15	233	236	8	2	238
Fountain	13	23	6	16	15	15	15	26	16	25	13	205	1	198	203	3	6	206
Franklin	10	13	6	14	9	8	8	9	9	11	18	115	4	61	62	48	10	115
Fulton	12	10	12	18	9	10	9	16	14	23	19	160	.....	160	160	.....	.....	160
Gibson	1	1	22	20	16	15	23	23	20	23	21	188	12	199	200	1	.....	200
Grant	33	35	37	35	34	58	39	34	49	51	51	487	11	492	498	6	10	498
Greene	22	31	22	30	25	24	30	24	22	31	31	329	8	321	320	8	9	329
Hamilton	23	20	20	13	11	24	24	25	24	25	24	246	8	250	254	4	.....	254
Hancock	7	11	8	13	10	15	14	14	17	12	14	141	.....	139	140	2	1	141
Harrison	10	9	11	14	18	18	5	20	19	15	15	154	4	158	158	.....	.....	158
Hendricks	22	22	11	8	3	8	11	14	14	16	21	146	3	147	147	1	2	149
Hery	20	12	19	20	13	25	18	14	26	24	23	232	5	237	237	.....	.....	237
Howard	17	26	21	26	21	19	22	20	37	41	35	304	5	306	302	3	7	309
Justin	12	22	15	17	21	7	14	32	26	25	24	244	.....	239	243	.....	5	244
Johnson	20	17	18	17	24	23	20	20	15	24	29	249	1	244	246	5	2	249
Jasper	17	12	10	7	3	2	13	7	8	17	11	115	.....	92	96	23	10	115
Jay	20	18	19	12	13	20	14	16	14	22	15	207	2	206	208	1	2	209
Jefferson	19	16	24	27	18	17	15	23	27	22	25	240	13	253	252	.....	.....	253
Jennings	9	11	5	11	8	11	10	15	8	20	19	136	2	137	137	1	1	138
Johnson	7	20	10	20	8	20	8	11	16	26	25	183	3	184	185	2	1	186
Knox	34	14	21	28	22	36	30	22	38	46	45	365	9	364	367	10	7	374
Kosciusko	20	26	22	21	10	16	20	16	18	23	25	232	1	230	230	8	3	233
Lagrange	14	13	7	8	9	13	9	13	15	8	17	137	.....	136	136	1	.....	137
Lake	95	90	80	107	87	43	72	71	63	84	102	984	30	669	723	344	290	1,014
Laporte	42	39	27	31	24	38	30	41	37	53	34	432	2	370	375	63	57	434
Lawrence	10	21	11	24	20	31	28	44	29	27	28	298	.....	298	298	.....	1	2
Madison	19	23	38	41	42	47	28	25	42	65	53	487	10	441	445	15	11	477
Marion	62	15	79	205	175	338	25	165	151	292	179	1,732	154	1,733	1,778	153	106	1,866
Marshall	15	9	20	21	21	21	13	13	21	21	30	214	1	214	213	1	2	215
Martin	9	4	9	14	14	8	9	8	11	10	13	119	.....	118	119	1	.....	119
Miami	16	28	16	27	19	28	18	19	26	27	23	272	1	270	270	3	3	273
Monroe	18	12	20	21	10	17	17	10	16	47	28	228	6	234	234	.....	.....	238
Montgomery	12	21	19	15	12	23	18	26	21	21	23	245	3	228	228	1	20	245
Morgan	16	9	15	10	15	12	11	11	19	21	22	183	.....	183	183	.....	.....	183
Newton	3	6	6	7	1	7	7	5	8	9	6	75	.....	64	72	2	2	75
Noble	12	8	16	26	9	19	8	14	19	24	21	197	4	196	196	2	2	197
Ohio	17	4	3	1	2	1	0	5	5	6	9	41	.....	45	45	.....	.....	45
Orange	6	4	4	37	15	11	21	11	7	10	15	161	2	163	163	.....	.....	163
Owen	7	16	9	13	10	15	7	8	10	9	12	119	1	120	120	.....	.....	121

TABLE C—Continued.

COUNTIES.	1908.												Color.		NATIONALITY.				Total.				
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	American.		Foreign.			Not Reported.			
															Grooms.	Brides.	Grooms.	Brides.		Grooms.	Brides.	Grooms.	Brides.
Parke.....	15	15	14	16	11	13	13	11	25	14	18	19	183	1	174	176	10	8					
Perry.....	14	8	10	13	15	9	12	17	22	14	25	10	164	5	155	157	13	11	1		1		
Pike.....	15	20	12	17	15	9	11	15	12	16	21	19	182		179	180	3	1					
Porter.....	12	16	10	19	14	14	13	10	15	19	17	9	166	2	145	150	21	15	2	3			
Posey.....	11	22	14	16	19	8	23	35	27	30	26	27	241	17	258	258							
Pulaski.....	8	17	10	5	5	9	11	6	8	9	10	8	106		96	101	10	5					
Putnam.....	14	15	12	11	18	19	8	8	22	19	31	14	190	1	188	188	3	3					
Randolph.....	15	19	18	24	17	20	11	20	21	24	34	29	251	1	250	249	2	2	1				
Ripley.....	12	13	6	18	9	11	6	10	12	13	11	18	139	6	138	136	1	3					
Rush.....	8	12	5	3	7	8	3	10	15	12	21	16	114		120	120							
Scott.....	6	11	9	10	7	10	6	6	10	9	19	12	115		115	115							
Shelby.....	18	22	17	24	11	15	26	21	16	23	30	24	242	5	245	246	2	1					
Spencer.....	14	22	23	27	10	13	17	21	28	22	23	32	238	14	252	252							
Stark.....	3	3	6	7	5	5	4	9	12	10	8	6	78		58	61	20	17					
Steuben.....	6	10	13	17	8	9	9	10	7	24	16	14	142	1	140	143	3						
St. Joseph.....	51	44	62	33	53	80	85	53	62	45	26	37	624	7	490	501	139	129	2	1			
Sullivan.....	26	24	22	19	29	17	25	28	24	36	31	34	314	1	295	299	19	15	1	1			
Switzerland.....	3	7	5	9	3	3	4	2	3	3	5	7	58		58	58							
Tipton.....	17	17	28	24	15	63	20	25	38	31	37	32	346	3	338	339	11	10					
Tipton.....	7	9	16	12	10	23	4	8	10	21	22	20	162		161	162	1						
Union.....	4	6	2	4	4	3	3	1	5	3	5	4	44		44	44							
Vanderburgh.....	72	68	63	61	94	97	97	81	82	100	96	90	882	109	940	963	50	26	1	2			
Vermillion.....	9	14	19	12	14	15	11	12	17	17	2	22	146	1	114	121	33	26					
Vigo.....	109	66	48	53	78	115	83	74	84	91	89	90	913	64	913	926	62	49	2	2			

Walash.....	20	18	8	20	9	34	13	18	22	15	17	32	224	2	213	219	1	.....	12	7	226
Warren.....	4	10	9	10	6	9	3	4	12	7	7	13	94	.....	90	90	4	3	.....	1	94
Warrick.....	14	13	15	16	9	14	23	4	12	16	34	29	199	8	207	206	.....	1	.....	.....	207
Washington.....	10	10	15	10	6	12	4	9	17	16	13	13	135	.....	135	135	.....	.....	.....	.....	135
Wayne.....	53	17	14	24	28	41	28	24	32	33	43	94	342	17	355	356	4	3	.....	.....	359
Wells.....	24	13	14	20	18	11	25	8	19	18	20	22	212	.....	210	210	1	1	1	.....	212
White.....	11	14	9	11	4	16	10	17	12	13	10	23	149	1	147	149	3	1	.....	.....	160
Whitely.....	8	7	9	11	4	6	9	12	11	10	22	11	120	.....	120	120	.....	.....	.....	.....	120
Grand total.....	1,824	1,682	1,658	2,042	1,763	2,338	1,697	1,943	2,240	2,452	2,504	2,473	23,867	749	23,137	23,428	1,383	1,095	96	93	24,616

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TABLE D.
Marriages, Grouped Ages, for the Year Ending December 31, 1908.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams.....	3	54	169	133	31	14	3	1	4	3	1	1	3	2	1	1	6	214	
Allen.....	3	123	494	442	127	80	51	38	18	8	10	7	4	1	1	1	2	698	
Bartholomew.....	9	57	145	120	35	19	11	10	8	6	5	1	1	1	1	1	2	215	
Benton.....	2	21	60	47	11	7	1	1	2	1	1	1	1	1	1	1	1	78	
Blackford.....	5	50	122	96	22	14	12	5	3	2	3	3	3	3	3	3	3	167	
Boone.....	12	51	138	123	27	13	12	8	7	3	6	4	2	1	1	1	1	202	
Brown.....	4	23	35	20	6	4	1	1	1	1	1	1	1	1	1	1	1	60	
Carroll.....	2	37	96	74	20	17	12	4	2	2	3	2	1	1	1	1	1	136	
Cass.....	12	79	202	174	68	36	23	17	5	2	9	4	2	1	1	1	1	318	
Clark.....	23	370	698	473	167	89	53	30	19	7	8	4	2	1	1	1	1	974	
Clay.....	9	89	202	165	61	28	12	12	11	3	3	1	1	1	1	1	1	298	
Clinton.....	7	82	203	144	29	26	16	16	14	6	8	5	4	1	1	1	1	281	
Crawford.....	58	44	33	43	13	16	10	12	6	5	3	4	1	1	1	1	1	124	
Davies.....	7	68	191	151	25	22	17	9	12	6	7	3	1	2	1	1	1	262	
Dearborn.....	2	47	136	113	39	20	9	5	2	5	4	1	1	1	1	1	2	183	
Deatur.....	4	37	103	90	32	18	10	7	4	3	4	2	1	1	1	1	1	158	
Delalb.....	3	61	135	38	26	12	6	6	8	4	12	6	2	1	1	1	1	239	
Delaware.....	9	102	302	262	77	43	19	18	21	12	7	2	4	1	1	1	1	440	
Dubois.....	3	52	132	98	14	10	5	3	5	3	4	1	1	1	1	1	1	168	
Elkhart.....	3	74	273	248	73	40	15	21	18	12	13	5	6	2	1	1	1	402	
Fayette.....	4	29	71	58	19	11	8	5	2	6	8	3	4	2	1	1	2	105	
Floyd.....	3	44	143	128	40	38	24	13	11	6	8	3	4	2	1	1	4	238	
Fountain.....	1	53	131	111	42	26	13	7	11	8	8	1	4	1	1	1	4	206	
Franklin.....	1	22	85	74	23	16	3	1	1	1	2	1	1	1	1	1	1	115	
Franklin.....	7	40	114	96	24	14	9	7	2	1	1	1	3	1	1	1	1	160	

Gibson.....	2	57	142	116	33	17	14	8	2	15	2	4	2	3	3	200
Grant.....	21	150	338	259	87	43	32	25	15	15	12	6	2	2	468	
Greene.....	21	116	233	157	42	31	16	6	9	7	5	1	1	6	339	
Hamilton.....	10	65	173	147	39	20	18	14	9	4	3	2	1	15	254	
Hancock.....	5	39	96	82	24	9	6	16	4	3	2	1	1	4	141	
Harrison.....	20	45	102	96	18	9	4	3	6	3	1	2	2	5	158	
Hendricks.....	4	37	99	85	28	11	5	6	3	6	3	3	1	2	149	
Henry.....	13	69	173	117	29	18	10	8	4	9	7	2	1	13	237	
Howard.....	12	78	187	162	54	35	23	21	19	10	9	2	4	1	209	
Huntington.....	10	58	157	144	34	20	20	14	13	3	6	2	1	3	244	
Jackson.....	7	71	167	143	42	14	15	12	7	9	11	2	1	1	249	
Jasper.....	3	23	73	70	22	10	10	6	1	3	4	2	1	1	115	
Jay.....	10	63	148	114	32	21	14	6	2	3	2	2	1	2	209	
Jefferson.....	17	81	157	121	44	34	22	10	6	7	6	1	1	1	253	
Jennings.....	3	38	95	78	22	13	6	3	4	3	6	2	2	2	138	
Johnson.....	6	46	125	104	34	18	7	10	6	3	4	3	1	3	186	
Knox.....	20	99	253	220	63	40	25	10	6	4	1	1	1	1	374	
Kosciusko.....	9	54	180	141	37	20	14	12	7	3	4	1	1	1	233	
Lafayette.....	2	43	109	76	13	5	4	10	6	3	3	2	1	1	137	
Lane.....	1	116	459	512	355	230	113	54	36	5	5	2	1	44	1,014	
Laporte.....	3	68	301	273	80	65	31	17	8	4	8	7	2	1	434	
Lawrence.....	19	116	195	136	50	26	15	5	7	7	7	4	1	1	206	
Madison.....	24	133	308	253	53	42	39	25	23	15	9	5	2	13	477	
Marion.....	33	339	1,222	1,146	386	266	141	90	67	28	29	13	6	2	1,886	
Marshall.....	4	72	157	108	22	18	12	10	8	4	7	3	3	2	215	
Martin.....	7	41	79	56	20	9	6	7	4	2	2	3	1	1	119	
Miami.....	12	40	199	100	41	27	16	11	4	3	1	2	1	1	197	
Monroe.....	11	72	145	103	32	23	26	18	5	3	7	2	5	3	273	
Montgomery.....	11	52	155	133	35	22	12	15	5	5	5	3	1	6	234	
Morgan.....	12	62	117	80	27	18	16	5	5	3	2	1	2	17	246	
Morgan.....	12	62	117	80	27	18	16	5	5	3	2	1	2	17	246	
Newton.....	3	16	59	53	8	1	1	3	4	2	2	1	2	2	153	
Noble.....	4	45	150	127	27	13	10	9	2	1	2	1	2	1	75	
Ohio.....	3	14	29	23	7	5	3	1	2	1	1	1	1	1	197	
Orange.....	8	44	108	94	26	16	9	6	3	2	3	1	1	1	45	
Owen.....	15	48	68	46	17	14	10	4	5	4	2	2	2	1	163	
Parke.....	3	52	129	106	30	13	9	8	5	5	6	1	1	1	120	
Perry.....	1	43	113	96	30	15	11	4	5	5	6	2	2	9	184	
Pike.....	1	71	125	88	19	11	9	4	7	5	4	2	2	10	169	
Porter.....	1	31	97	95	40	33	23	7	3	3	2	2	1	1	182	
Posey.....	2	82	177	129	51	29	17	14	6	3	2	1	1	1	168	
Pulaski.....	6	40	67	53	18	3	5	5	5	2	3	2	2	2	268	
Putnam.....	7	52	129	110	31	16	7	7	8	2	4	1	1	1	106	
Randolph.....	10	74	188	135	25	31	16	6	5	2	4	3	3	1	191	
															252	

TABLE D—Continued.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Ripley	3	32	83	80	33	16	10	5	2	3	6	3	2	1	2	5	2	139	
Rush	1	23	82	70	18	15	9	3	3	3	2	2	1	1	5	5	120		
Scott	1	32	73	55	18	13	11	9	8	4	3	2	1	1	5	5	115		
Shelby	6	63	162	126	47	30	13	15	7	8	8	2	2	2	2	3	247		
Spencer	6	73	180	151	40	15	12	5	5	3	5	4	2	2	2	1	252		
Starke	2	26	57	44	11	4	4	1	3	2	2	1	1	1	5	78	143		
Steuben	1	38	102	78	26	14	6	4	5	3	2	2	1	1	10	15	631		
St. Joseph	10	135	419	353	115	79	49	34	21	14	5	1	2	1	10	15	315		
Sullivan	26	136	215	134	43	24	16	15	11	5	4	4	1	1	2	58	349		
Switzerland	8	38	39	38	8	6	4	4	2	1	1	1	2	1	2	2	162		
Tippecanoe	5	57	220	218	72	46	31	17	12	6	8	4	1	1	1	1	44		
Tipton	7	49	117	87	21	12	2	4	6	5	6	4	2	1	3	6	991		
Union	1	12	29	24	10	3	3	2	2	1	2	1	3	4	2	2	147		
Vanderburgh	15	187	675	617	188	121	63	44	38	12	5	3	3	2	3	2	977		
Vermillion	1	47	99	67	20	15	14	8	6	3	3	3	2	2	4	4	228		
Vigo	59	294	602	467	201	144	67	49	28	21	13	1	3	1	6	2	94		
Wabash	6	60	157	129	37	24	16	7	3	4	2	2	1	1	3	1	207		
Warren	9	44	144	107	11	9	6	3	2	2	2	2	2	1	1	1	135		
Warrick	9	55	133	123	42	19	8	6	3	3	3	1	1	1	1	1	359		
Washington	4	40	99	77	23	9	5	5	3	3	1	1	1	1	1	1	212		
Wayne	7	63	227	219	72	44	16	17	15	10	8	3	2	1	12	3	150		
Wells	12	65	152	124	36	15	9	5	7	1	4	3	1	1	1	1	120		
White	1	42	102	86	28	9	4	4	6	4	3	3	4	1	1	1	120		
Whitley	2	28	74	69	22	12	12	6	3	3	7	7	1	1	1	1	24,616		
Grand total	796	6,273	16,356	13,678	4,332	2,684	1,574	1,055	767	444	440	180	154	42	14	1	174	259	

TABLE No. 7.

Deaths by Occupations, Months and Ages for the Year Ending December 31, 1908.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Actors and actresses.....	Males..... Females.....				1	4	1			1	1		
Agents.....	Males..... Females.....	11	10	3 1	11	1	9	8	9	4	5	6	7
Architects.....	Males.....						1		1		1		
Artists.....	Males..... Females.....		1						1				2
Auctioneers.....	Males.....	1							1				
Bakers and confectioners.....	Males..... Females.....	6 1	3	4	3	1	8	1		1	3	5	5
Bankers.....	Males.....	1	3	2	1	2	1					2	1
Barbers.....	Males.....	4	4	4	4	3	7	9	7	2	7	8	7
Bar tenders.....	Males.....	8	13	7	8	8	8	12	11	5	2	6	3
Basket makers.....	Males.....			1								1	1
Blacksmiths.....	Males.....	11	8	11	17	9	6	10	6	10	6	12	8
Bookkeepers.....	Males..... Females.....	4	2	4 1	3 1	5 1	6	1	4	5	4	7	2
Brewers, distillers, etc.....	Males.....	4	1		1	1	1		1		1	2	1
Brickmakers.....	Males.....				1					1	1		

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Builders and contractors.....	Males.....	4	4	4	6	7	7	3	4	7	7	9	12
Butchers.....	Males.....	9	3	9	4	3	4	8	4	4	.....	6	4
Cabinet makers.....	Males.....	4	11	12	6	6	2	2	2	3	7	4	4
Carpenters.....	Males.....	42	39	37	35	29	23	23	35	31	26	32	35
Carriage and wagon makers.....	Males.....	.....	5	2	6	4	2	1	3	1	4	6	5
Cheese makers.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chemists and druggists.....	Males.....	3	3	1	3	3	3	.....	2	3	.....	3	4
Cigar makers.....	Males.....	3	2	4	5	1	1	4	1	.....	3	4	3
	Females.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Clergymen.....	Males.....	7	10	6	12	9	6	6	2	6	10	7	12
	Females.....	1	.....	.....	1	.....	2	1	1	1	.....	.....	.....
Clerks.....	Males.....	20	20	21	13	21	12	18	23	16	12	19	19
	Females.....	6	4	.....	2	2	1	3	3	4	3	2	3
Collectors.....	Males.....	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Commercial travelers.....	Males.....	5	3	7	5	6	1	5	2	6	2	7	.....
Cooks.....	Males.....	2	.....	2	1	1	3	.....	1	.....	2	.....	.....
	Females.....	2	1	.....	3	2	.....	1	1	1	1	.....	.....
Coopers.....	Males.....	4	5	5	5	4	8	7	1	4	5	2	3
Dairymen.....	Males.....	2	1	.....	.....	.....	.....	.....	1	1	.....	.....	.....
Dentists.....	Males.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
	Females.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	4	.....
Draftsmen.....	Males.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....

Editors, reporters, etc.	Males.....	2	4	2	1	2	2	2	1	5	.....
	Females.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Electricians.....	Males.....	6	2	4	1	3	4	2	4	5	2
Elevator operators.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Engravers.....	Males.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	Males.....	16	9	7	15	15	7	8	12	9	6
Factory hands.....	Males.....	10	19	9	.5	2	7	6	7	5	2
	Females.....	4	1	3	.....	1	2	.....	1	1	1
Farmers.....	Males.....	415	421	376	366	279	325	324	330	352	334
	Females.....	34	36	43	29	20	14	6	22	6	7
Firemen.....	Males.....	2	6	2	1	5	6	5	2	5	1
Furriers.....	Males.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Gardeners.....	Males.....	3	8	4	2	1	3	4	5	2	5
Glass-workers.....	Males.....	5	4	5	2	2	1	6	3	9	6
Hair dressers.....	Females.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harness makers and saddlers.....	Males.....	2	1	4	2	4	3	2	2	3	2
Hotel and boarding house keepers.....	Males.....	4	1	1	1	3	.....	.....	2	3	7
	Females.....	2	1	1	.....	2	.....	.....	.....	1	1
Housewives.....	Females.....	575	627	583	516	516	442	520	509	487	507
Hunters and fishermen.....	Males.....	1	.....	.....	.....	.....	.....	.....	.....	.....	553
Inspectors.....	Males.....	1	.....	2	2	.....	2	1	2	1	5
Labors.....	Males.....	175	162	156	157	165	134	124	119	138	153
Laundresses and laundresses.....	Males.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
	Females.....	2	1	1	.....	2	2	2	1	.....	1
Lawyers.....	Males.....	6	6	1	5	5	9	4	2	6	2
Liverymen.....	Males.....	5	2	1	2	.....	3	7	1	4	.....
Lumbermen.....	Males.....	7	1	2	.....	5	3	.....	1	2	2
											1
											4

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Machinists.....	Males	18	12	7	13	11	9	11	10	6	11	12	8
Mail service.....	Males	3	4	4	3	1	2	1	1	1	1	2	1
	Females									1			
Managers and superintendents.....	Males	6	3	7	5	1	2	4	8	4	2	5	10
	Females					2							1
Manufacturers.....	Males	7	9	7	4	8	1	1	5	3	3	4	2
Masons.....	Males	2	12	11	3	1	3	4	6	6	10	5	3
Mechanics.....	Males	6	9	11	10	12	4	5	4	7	4	7	8
Merchants.....	Males	26	45	31	34	25	25	32	33	25	33	34	34
	Females	1	1				1						
Messengers.....	Males	1	3								1	1	
Millers.....	Males	11	3	4	6	8	2	3	1	2	2	2	3
Milliners and seamstresses.....	Females	7	12	9	8	2	5	6	3	3	3	6	3
Miners.....	Males	20	14	13	18	12	15	16	7	13	18	15	13
Moulders.....	Males	2	8	6	5	6	8	2	5	3	4	4	4
Musicians.....	Males		2	1	5		2			2		3	1
	Females	1			1		2						
Nuns.....	Females	2										1	
Nurses.....	Males												
	Females	2	4	4	1	1	1		2	1	1	2	2
Oil workers.....	Males	1	2		1		1	2		4	1	1	
Opticians.....	Males												

Painters.....	Males	19	9	23	13	12	17	11	12	6	12	14	13
Peddlers.....	Males	2	2	1	.....	.....	1	.....	2	.....	.....	.....	1
Photographers.....	Males	.....	1	1	.....	2	.....	.....	1	.....	.....	.....	2
Physicians.....	Males	13	18	16	11	8	4	8	8	7	10	7	6
	Females	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Plasterers.....	Males	2	3	4	3	5	.....	4	5	3	1	4	3
Plumbers.....	Males	4	3	1	3	.....	3	1	1	1	5	1	2
Police-men.....	Males	2	4	5	7	3	2	.....	2	4	2	5	4
Potters.....	Males	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	1
Printers and book binders.....	Males	3	3	1	3	4	1	3	1	1	3	6	4
	Females	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Professors and teachers.....	Males	6	2	7	3	3	5	4	1	4	5	4	1
	Females	9	14	4	4	3	4	5	6	8	4	2	3
Public officials.....	Males	3	3	2	4	3	2	5	1	3	.....	3	1
	Females	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Railway employees.....	Males	20	21	21	10	27	15	15	19	16	15	15	18
Sailors.....	Males	4	2	1	2	1	.....	1	2	.....	3	2	1
Servants.....	Males	5	5	6	6	4	6	4	7	3	6	9	6
	Females	52	54	36	33	23	24	35	25	18	23	24	20
Shoemakers.....	Males	5	3	5	9	5	3	9	8	4	4	10	8
Stenographers.....	Males	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....
	Females	2	.....	3	.....	1	1	1	3	2	2	1	1
Stock dealers.....	Males	2	6	1	2	3	2	1	.....	1	1	1	1
Stonecutters.....	Males	3	3	2	2	.....	2	.....	1	4	.....	5	1
Students.....	Males	7	5	11	11	4	11	11	4	7	3	4	4
	Females	3	3	5	11	9	5	9	3	9	10	6	6
Surveyors and civil engineers.....	Males	.....	1	.....	1	.....	.....	.....	.....	.....	2	1	2

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Tailors.....	Males Females.....	7 1	3 1	9 1	1 1	2 1	6 1	8 1	1 1	3 1	6 1	3 1	1 1
Tanners and curriers.....	Males.....	2	2	1	1	1	1	2	2	1	1	1	1
Teamsters.....	Males.....	15	9	14	12	6	9	9	10	7	15	12	9
Telegraph and telephone operators.....	Males..... Females.....	1 1	1 1	4 3	1 1	4 2	1 2	2 2	1 1	2 1	1 1	2 1	2 1
Tinners.....	Males.....	1	5	4	3	1	1	1	2	1	2	2	1
Undertakers.....	Males.....	2	1	1	1	1	1	1	1	1	1	1	1
Upholders.....	Males.....	1	1	1	1	1	1	1	1	1	1	1	1
Veterinary surgeons.....	Males.....	3	4	6	6	3	6	1	3	1	3	1	1
Volunteer soldiers and pensioners.....	Males.....	1	1	1	1	1	1	4	3	1	2	3	5
Watchmakers and jewelers.....	Males.....	1	1	1	1	1	1	1	1	3	2	2	2
Wavers.....	Males..... Females.....	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
No occupation.....	Males..... Females.....	238 462	236 521	188 440	223 406	199 385	164 343	179 339	166 362	140 378	171 333	138 317	149 332
Totals.....	Males..... Females.....	1,300 1,173	1,308 1,262	1,207 1,124	1,171 1,031	1,092 989	918 860	978 938	949 926	933 940	1,025 999	1,006 925	1,015 903
Total, 15 years and over.....		2,473	2,590	2,331	2,202	2,081	1,778	1,916	1,875	1,873	1,924	1,931	1,914
Under 15 years.....													
Subtotals.....													
Occupations and ages not given.....													
Grand total.....													

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	Un- known	Totals.	
		to 20	to 25	to 30	to 35	to 40	to 45	to 50	to 55	to 60	to 65	to 70	to 75	to 80	to 85	to 90	over.		Males.	Females.
Actors and actresses.....	Males.....		2						1	1	1					2			7	1
	Females.....									1										
Agents.....	Males.....		3	4	7	4	3	3	14	8	14	14	6	2	2				84	1
	Females.....											1								
Architects.....	Males.....			1			1		1										3	
Artists.....	Males.....																			
	Females.....				1						1	1	1						2	2
Auctioneers.....	Males.....											2							2	
Bakers and confectioners.....	Males.....	1	3	2	3	3	2	2	8	3	2	2	2	2	5	1	1		40	1
	Females.....									1										
Bankers.....	Males.....						1	1	3		1	3	2	1					13	
Barbers.....	Males.....		4	10	12	6	9	3	4	5	2	4	4		1			1	61	
Bartenders.....	Males.....	1	1	5	11	15	16	16	16	3	6	1			1				91	
Basket makers.....	Males.....													1	1		1		3	
Blacksmiths.....	Males.....	2			6	6	6	4	10	7	13	20	9	11	15	5			114	
Bookkeepers.....	Males.....	1	4	7	5	1	2	5	5	3	2		8	2	2				47	5
	Females.....	1	1	2																
Brewers, distillers, etc.....	Males.....	1	1		2	1	2	1	1		1		2	1					13	
Brickmakers.....	Males.....															2			3	
Builders and contractors.....	Males.....	1	1	1	1	3	6	4	8	7	6	8	9	8	4				66	
Butchers.....	Males.....	2	2	2	5	5	5	4	3	7	9	6	4	4	2				58	
Cabinet makers.....	Males.....			5	2	2	1	4	6	3	6	9	8	10	3	4			63	

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 90	90 and over.	Un-known	Totals.	
																		Males.	Females.
Carpenters.....	Males		2	9	14	12	13	22	30	46	49	41	59	50	34	6		387	
Carriage and wagon makers.	Males			1	1	1	1	1	4	2		9	8	4	7			39	
Cheese makers.....	Males											/							
Chemists and druggists.....	Males			1		4	3	3	4	4	3	4	2					28	
Cigar makers.....	Males	3	3	2		1		3	4		3	8	2	1	1			31	
	Females	1																1	1
Clergymen.....	Males		1		2	2	6	7	1	5	14	11	13	16	14	1		93	7
	Females		1					1	1	1	1	1	1		1				
Clerks.....	Males	15	31	30	26	19	17	15	19	15	9	9	6	3				214	33
	Females	5	10	9	3	1	1	1	1					1			1		
Collectors.....	Males	1						1		1	1							4	
Commercial travelers.....	Males	1	5	4	4	3	6	5	5	3	3	6	3	1				49	
Cooks.....	Males			4		2	4		1		1	1		1				14	
	Females		1	2	1	1	2		1	2	1		2						12
Coopers.....	Males				2	6		1		3	1	6	5	16	10	3		53	
Dairymen.....	Males				2		1	1			1							5	
Dentists.....	Males	1		1						1	2	3			1			9	
Draftsmen.....	Males			2		1			1									4	
Editors, reporters, etc.	Males			1	1	1		1	1	1	4	3	3	1	1	1		19	2
	Females			1		1													
Electricians.....	Males	4	12	8	5	5		3	2	1				1				41	
Elevator operators.....	Males							1										1	

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 90	90 and over.	Un- known	Totals.		
																			Males.	Females.
Managers and superintendents.	Males		3	3	2	6	10	9	4	4	6	4	4	2					57	3
	Females								1	2										
Manufacturers.	Males	1	1	4	2	5	4	1	3	3	8	7	4	6	5				54	
	Females																			
Masons.	Males	4	1	1	2	2	5	6	11	6	10	5	7	5	1				66	
	Females																			
Mechanics.	Males	1	6	9	7	6	6	10	4	7	5	6	6	7	6		1		87	
	Females	2	11	11	15	16	20	24	35	40	48	41	50	34	36	4			387	2
Messengers.	Males	4	1								1								6	
	Females																			
Millers.	Males						2	2	3	5	5	8	3	3	14	2			47	
	Females																			
Milliners and seamstresses.	Males	3	7	10	3	11	9	3	3	1	5	3	2	3	4					
	Females																			67
Minors.	Males	11	13	19	22	21	9	13	8	12	15	16	5	5	3		2		174	
	Females																			
Moulders.	Males	6	4	7	5	3	6	8	2	4	5	2			4	1			57	
	Females	2	3	1	2															
Musicians.	Males	2	3	1	2		2	1	2			1		1	1				16	4
	Females	1	2	1																
Nurs.	Males				1	1					1									3
	Females																			
Nurses.	Males	1	1	2	3	1	3	1	2	1	2	1	1		3				2	22
	Females																			
Oil workers.	Males			1		4		3		1	1	2	1						13	
	Females																			
Opticians.	Males																			
	Females																			
Painters.	Males	3	10	8	16	14	14	16	19	19	15	11	4	5	6	1			161	
	Females																			
Peddlers.	Males				1	1														9
	Females																			

TABLE No. 7—Continued.

OCCUPATIONS.	Sex.	15	20	25	30	35	40	45	50	55	60	65	70	75	80	90	Un- known	Totals.	
		to 20	to 25	to 30	to 35	to 40	to 45	to 50	to 55	to 60	to 65	to 70	to 75	to 80	to 90	Males		Females.	
Teamsters.....	Males	6	4	8	13	7	15	14	17	15	13	13	2						127
Telegraph and telephone operators.....	Males	1	6	4	2		3	1	2	1									21
	Females	1	6		1		1	1					1						10
Tinners.....	Males	2	2		2	1	2	1	1	1	3	3	1	2					21
Undertakers.....	Males			1					1	1	1								5
Upholsterers.....	Males		1	1			1										1		4
Veterinary surgeons.....	Males				2		1			2	1	4			1				11
Volunteer soldiers and pensioners.....	Males				1	1		1			10	9	7	6	6	1			42
Watchmakers and jewelers.....	Males		1		1	1		1		1	1	1	3	3	2				15
Weavers.....	Males								1					1	1				4
	Females																		1
No occupation.....	Males	131	112	85	68	82	79	93	106	131	159	202	298	270	307	42	26	2,191	
	Females	274	275	213	221	178	176	220	194	271	314	445	471	552	684	120	15	4,622	
Totals.....	Males	482	675	614	622	634	636	716	875	972	1,105	1,278	1,453	1,254	1,380	179	47	12,902	
	Females	525	723	699	627	621	583	688	694	790	937	1,140	1,196	1,148	1,371	215	34	11,990	
Total, 15 years and over.....		1,007	1,398	1,313	1,249	1,255	1,219	1,404	1,569	1,762	2,042	2,418	2,648	2,402	2,731	394	81	24,892	
Under 15 years.....																			
Stillbirths.....																			2,023
Occupations and ages not given.....																			
Grand total.....																			36,224

TABLE No. 8.

Deaths from Tuberculosis, all Forms, with Rates per 100,000 Population, for Certain Occupations of each sex in Indiana, 1908.

OCCUPATION.		Number of Deaths 15 Years of Age and Over.	Death Rate per 100,000.
MALES.			
1	Farmers	493	18.0
2	Laborers	391	14.3
3	No occupations	240	10.6
4	Clerks	52	1.9
5	Carpenters	45	1.6
6	Merchants	34	1.2
7	Painters	34	1.2
8	Students	33	1.2
9	Railroad employes	28	1.0
10	Machinists	26	.9
11	Teamsters	26	.9
12	Miners	25	.9
13	Bartenders	24	.8
14	Barbers	20	.7
15	Factory hands	15	.5
16	Servants	15	.5
17	Engineers	15	.5
18	Glassworkers	14	.5
19	Mechanics	14	.5
20	Agents	13	.4
21	Bookkeepers	12	.4
22	Physicians	11	.4
23	Clergymen	11	.4
24	Cabinetmakers	11	.4
25	Moulders	10	.3
26	Millers	9	.3
27	Managers and superintendents	9	.3
28	Cigarmakers	8	.2
29	Commercial travelers	8	.2
30	Blacksmiths	8	.2
31	Plumbers	8	.2
32	Printers and bookbinders	8	.2
33	Electricians	8	.2
34	Harnessmakers and saddlers	8	.2
35	Coopers	7	.2
36	Butchers	7	.2
37	Chemists and druggists	7	.2
38	Professors and school teachers	7	.2
39	Lumbermen	7	.2
40	Tailors	7	.2
41	Telephone and telegraph operators	7	.2
42	Firemen	6	.2
43	Plasterers	6	.2
44	Mail service	6	.2
45	Masons	6	.2
46	Tinners	6	.2
47	Cooks	5	.1
48	Bakers and confectioners	5	.1
49	Sawyers	5	.1
50	Liverymen	5	.1
51	Stonecutters	5	.1
52	Builders and contractors	4	.1
53	Gardeners	4	.1
54	Police	4	.1
55	Brewers and distillers	4	.1
56	Musicians	4	.1
57	Stock dealers	4	.1
58	Carriage and wagonmakers	3	.1
59	Sailors	3	.1
60	Hotel and boardinghouse keepers	3	.1
61	Shoemakers	3	.1
62	Stenographers	2	.07
63	Volunteer soldiers and pensioners	3	.1

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TABLE No. 8—Continued.

OCCUPATION.		Number of Deaths 15 Years of Age and Over.	Death Rate per 100,000.
64	Photographers	2	.07
65	Inspectors	2	.07
66	Laundrymen	2	.07
67	Manufacturers	2	.07
68	Undertakers	2	.07
69	Upholsterers	2	.07
70	Veterinary surgeons	2	.07
71	Collectors	1	.03
72	Dentist	1	.03
73	Editors and reporters	1	.03
74	Actors	1	.03
75	Artists	1	.03
76	Brickmakers	1	.03
77	Potters	1	.03
78	Watchmakers	1	.03
79	Public officials	1	.03
FEMALES.			
1	Housewives	1,154	42.2
2	No occupations	813	29.7
3	Servants	62	2.2
4	Students	37	1.3
5	Professors and teachers	22	.8
6	Milliners and seamstresses	22	.8
7	Clerks	14	.5
8	Stenographers	8	.2
9	Factory hands	6	.2
10	Nurses	5	.1
11	Musicians	4	.1
12	Cooks	3	.1
13	Telephone and telegraph operators	2	.07
14	Clergywomen	2	.07
15	Printers and bookbinders	1	.03
16	Hair dressers	1	.03
17	Laundresses	1	.03
18	Editors and reporters, etc	1	.03
Total males		1,904	69.7
Total females		2,158	79.0
Total all occupations		4,062	149.7

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